The **future** of **video**gaming

October 1993 £three ¥900 $ten

EDGE

Mega Drive ■ Super Nintendo ■ **PC** ■ Amiga ■ **PC Engine** ■ Neo Geo ■ **3DO**

The changing **face** of video games



3DO how the **dream machine** shapes up in **real** life

1

Issue **one**

10

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One of the animation frames from Psygnosis' CD-ROM game, *Microcosm* (see page 70). Rendered in 3D using Silicon Graphics workstations, the game uses 44,000 such images – a vast 298 megabytes' worth on one CD

We know who you are

We **know** you're a dedicated videogamer who thirsts for knowledge on the very latest titles

We **know** you're only interested in the very best the gaming world has to offer

We **know** you're hungry for information about the next wave of gaming technology

So we **know** you're going to love EDGE

This magazine is brought to you by dedicated, hardened gameplayers and experts in all fields of videogaming technology. As well as extensive coverage of what matters in the Mega Drive, Super Nintendo and PC markets, **Edge** taps into a huge underworld of videogame entertainment that simply isn't covered anywhere else. It answers questions other magazines don't even know how to ask...

Just how are the latest games being created? **Edge** is first to speak to the designers behind *Microcosm*, the groundbreaking CD-ROM game from Psygnosis. The interviews start on page 70.

What machine will you be playing on next year? Only one magazine in the UK has been permitted inside the 3DO company to see their revolutionary new Interactive Multiplayer – and you're holding it: the full inside story on 3DO begins on page 48.

What special techniques are being developed to make games even better? No-one else has even mentioned that SNES *King Arthur's World* has Surround Sound music and effects. **Edge** tells you exactly how it was done – and why it's important. Find out on page 60.

Every issue we'll be fighting to ensure you're ahead of the field for news and previews of videogames. And when we aren't first with a game, it's because it's not worth your time... or because we'll be bringing you the whole story – not just a handful of intro screenshots and a mouthful of garbled rumour.

We'll cover the best stories, in more detail, with more information than anyone else. Depend on it.

Yes, **Edge** is expensive. But information doesn't come cheap: in this first issue alone, hundreds of manhours were spent visiting software houses across the US and throughout Japan, talking to programmers and designers, investigating news stories around the world.

And, above all, we take videogames seriously. The UK market for games is now worth over £600 million – getting on for twice the entire CD audio market. So **Edge** will be making sure you know the truth about the hardware, the software, and the people who make the decisions affecting the games you play.

Finally, as is quite obvious, **Edge** isn't for everyone. But if you think it's for you, perhaps you'll take a minute or two to fill out the questionnaire (page 111) and tell us what you feel about this first issue. Seriously, we want to know.

Welcome to **Edge**. Now get in there and enjoy the magazine!

The **future** is almost here...

inside EDGE issue one

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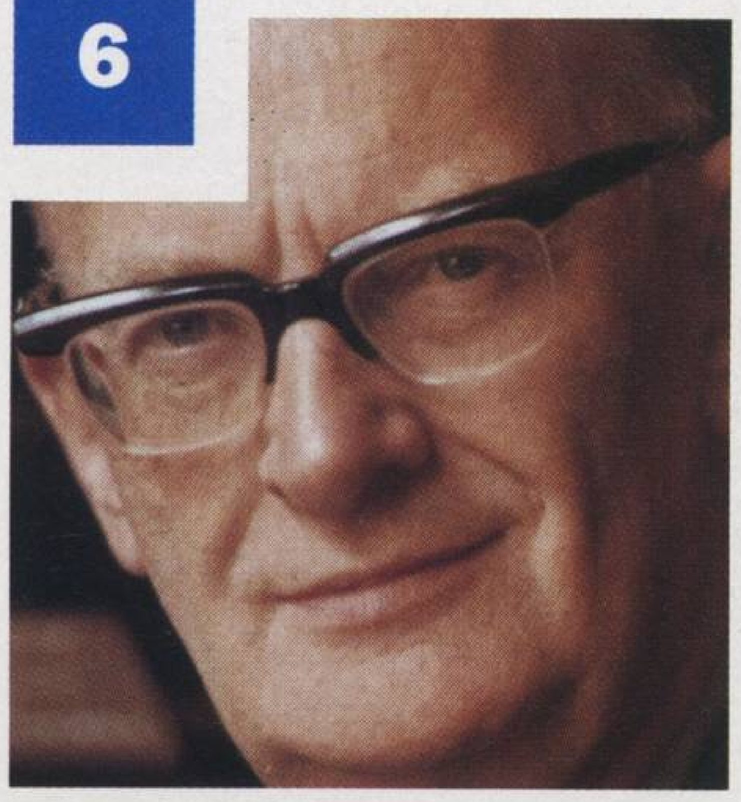
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Required reading *Game Over: Nintendo's Battle To Dominate An Industry*, **David Sheff** (1993, Hodder and Stoughton, ISBN 0-340-59557-4, £19.99): 'Fujitsu, with profits similar to Nintendo, had 50,000 employees. Nintendo had 850. Nintendo in 1991 earned about $1·5 million per employee. Internationally, Nintendo employed some 5,000 people. That year Sony, with 50,000 employees, earned $400 million less than Nintendo...

'When Apple Computer president Michael Spindler was asked in March 1991 which computer company Apple feared most in the 1990s, he answered, 'Nintendo.''

insideview



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Futureview

What *is* the future of videogaming? What of CD-ROM, direct-cabling and virtual reality? **Edge** speaks to leading lights in industries of the imagination: visions of the future, from the men who are busy shaping it



26

Prescreen

Edge examines more than 20 of the better games you'll be playing over the coming months, including *Inferno* (left), *Jurassic Park*, *Forgotten Castle* and some ancient eight-bit game called *Impossible Mission*



Photograph: **Peter Canning**

66

Competition

There's only one thing better than owning state of the art gamesplaying technology... and that's owning state of the art gamesplaying technology that didn't cost you a penny. There's a grand's worth of kit destined for one **Edge** reader. Do you feel lucky?

Testscreen

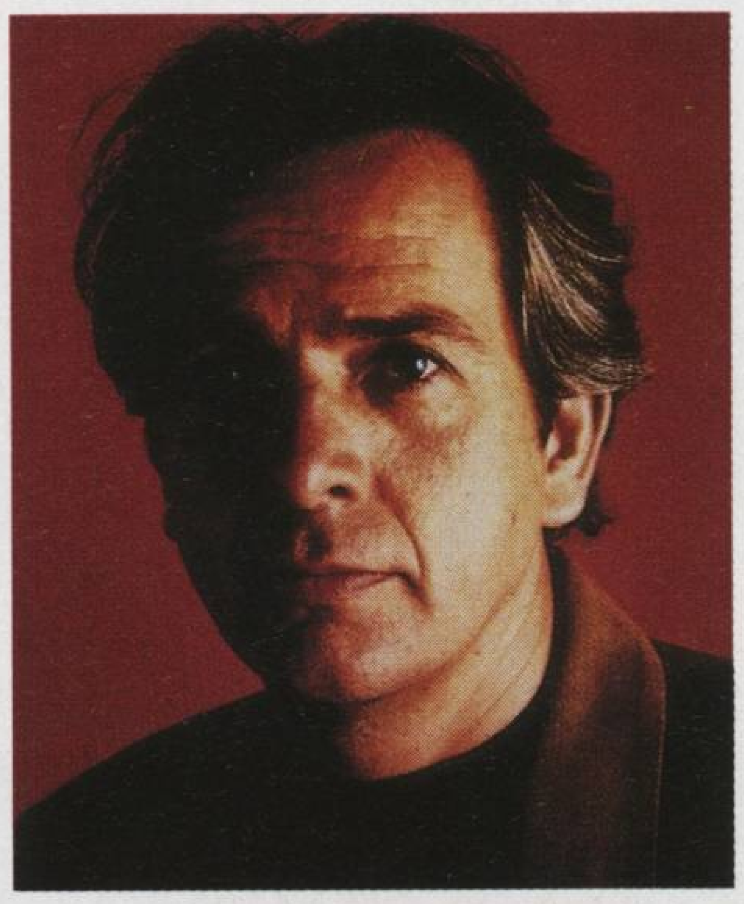
Skimming the cream from the top of the videogame milk, **Edge** rates 20 of the hottest new titles – including the latest versions of *Street Fighter II* (right) on SNES and PC Engine, plus the new, long-awaited Mega CD title *Silpheed*

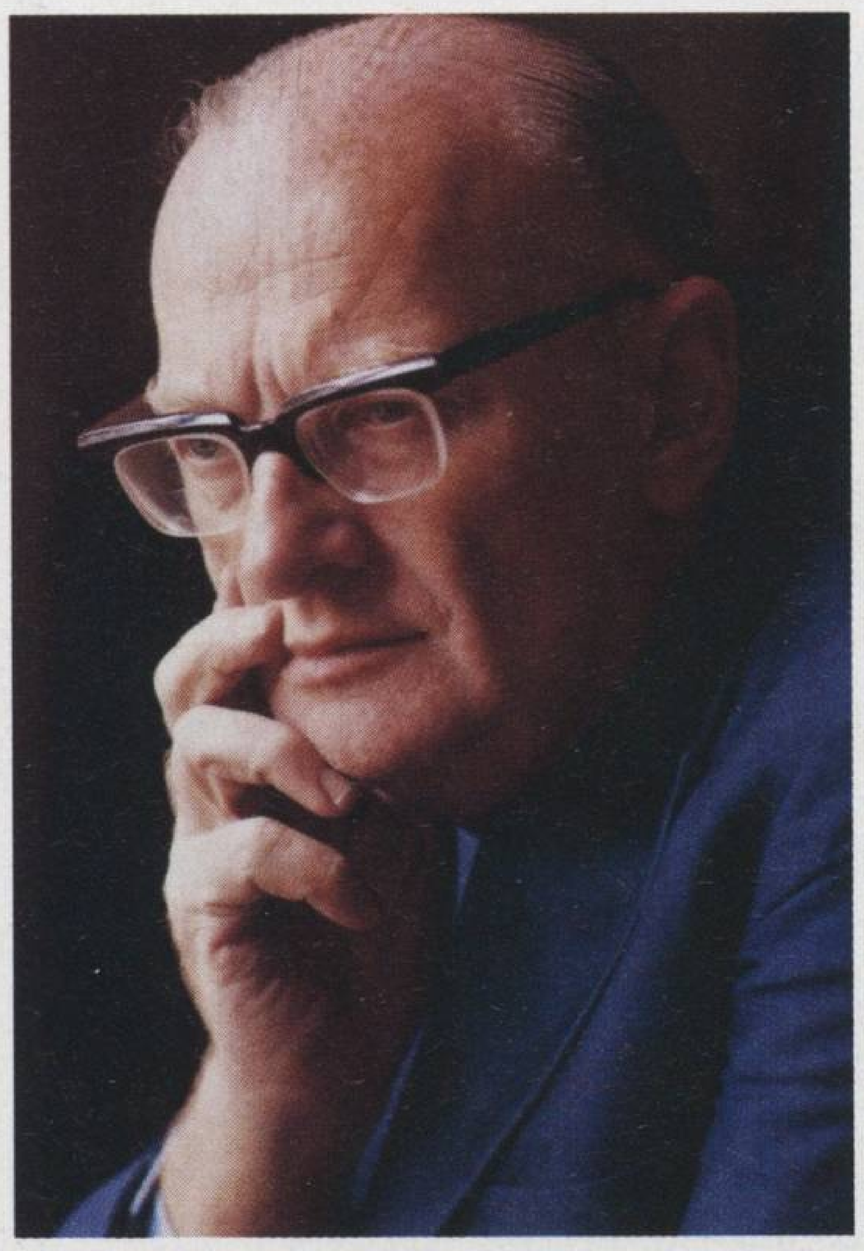


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The shape of things to come...

Everyone has an opinion of what the future holds, but some people are closer to it than others. **Edge** spoke to the visionaries





'I have an ambiguous attitude to videogames: they can be a good thing, but also very addictive – I myself was addicted – to *SnakeBite* on my Apple II about ten years ago.

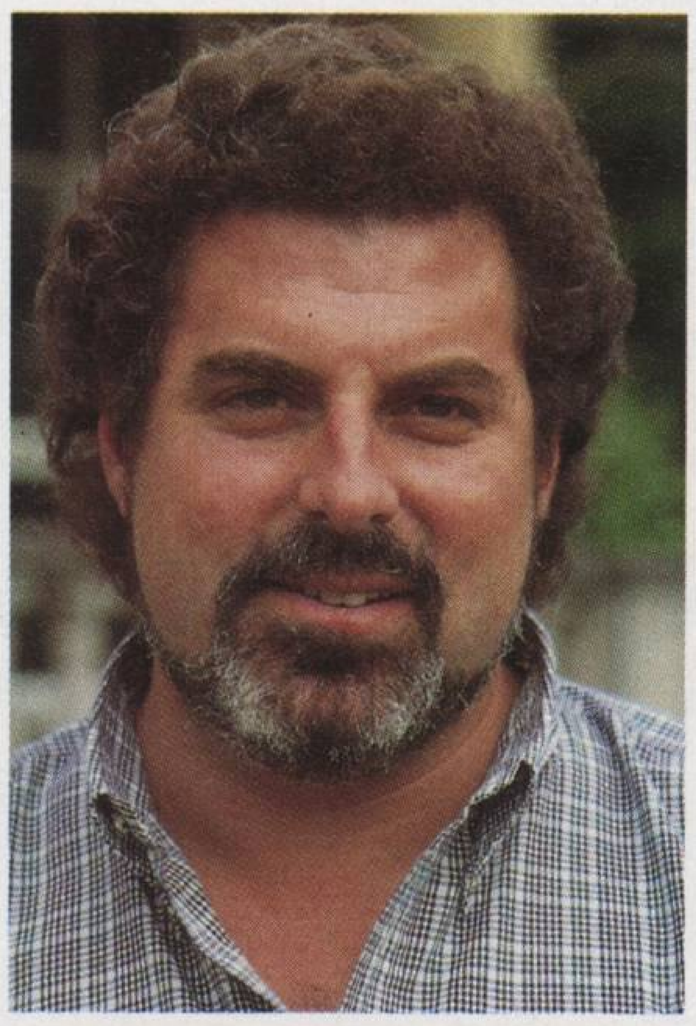
'I regard the addictive nature of virtual reality as a *real* danger. Of course it could be a shortsighted view: if we are plugged into the whole universe, why should we unplug ourselves?'

Arthur C. Clarke

'It's a new world. In about five years CD-ROM is going to absorb entertainment, education and information. There's a growing palate of what I call **enabling technology**, which allows the consumer to think of himself as the artist.'

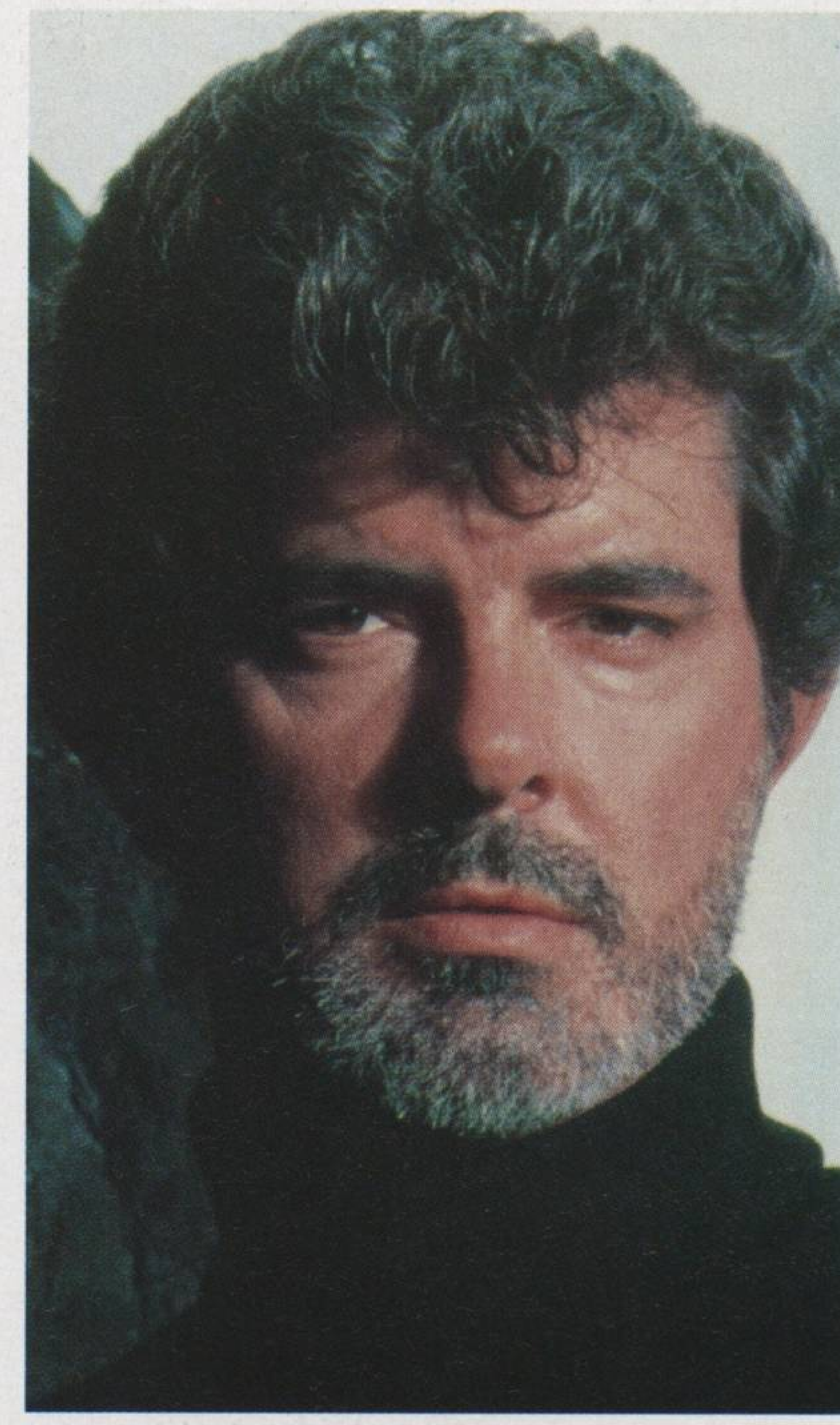
Peter Gabriel





Games aren't going to be played by the 13 yearold shut away in his room; they're going to be **connective, interactive.** I foresee a day when you go to a movie theatre, there's about 300 people there, and between you, you all play the movie. From your seats, you control what happens. The technology is here today...

Mark Lewis, president of Electronic Arts



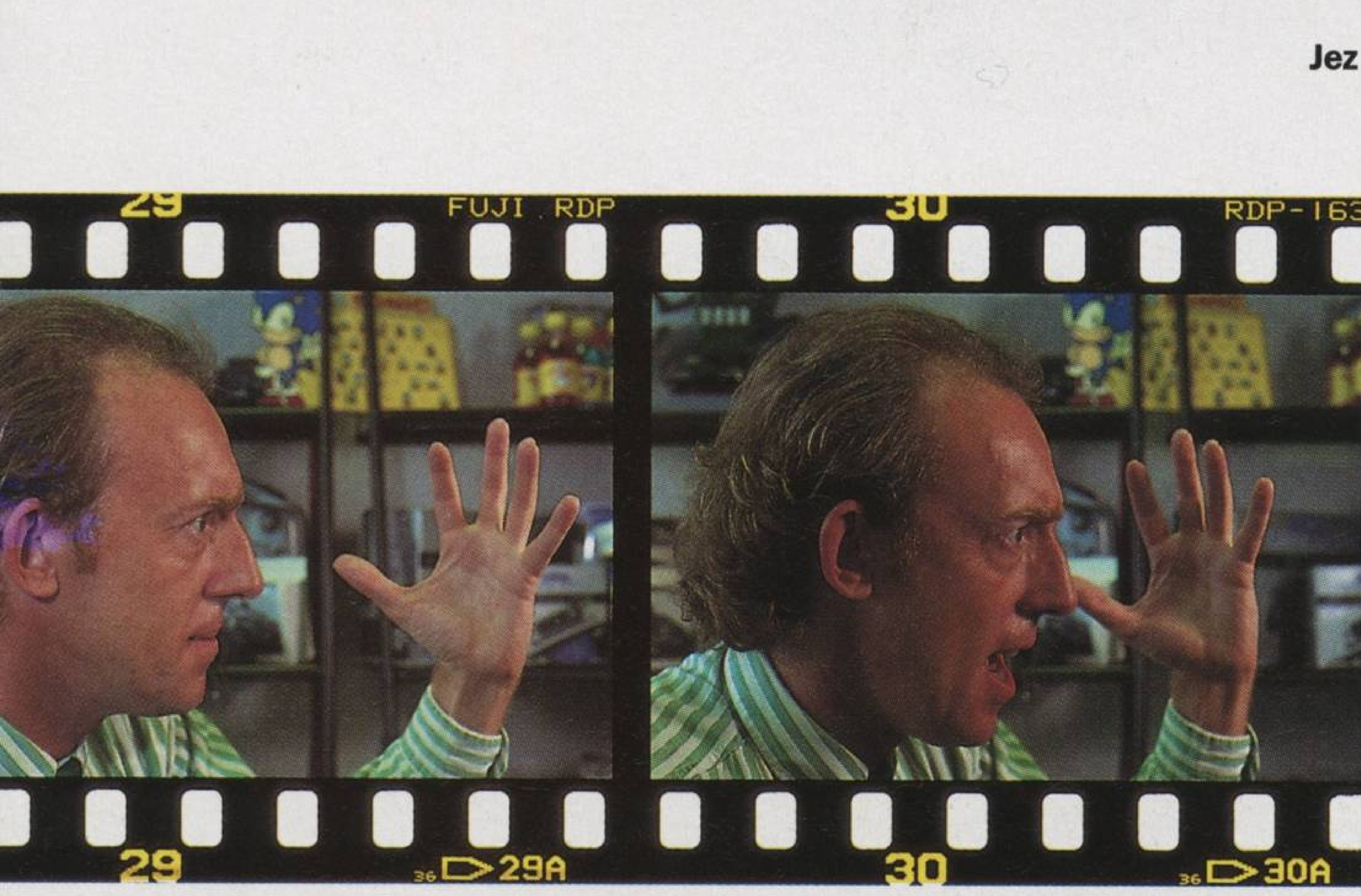
'Telephone and cable companies will lay the **information super highway** and it will be one of the greatest technological developments of the 20th century. But someone will still have to fill up the highway. It won't be a new entertainment form, but a more sophisticated version of what exists now.'

George Lucas, movie director/producer



'Within a few years from now, we'll start to see cable and satellite **direct broadcast games** where you select from a menu of games and it'll constantly download new parts of the game into your machine while you're playing.

Jez San, MD of Argonaut Software



'I think incredibly **sophisticated virtual reality** is the future. Experiences that somehow tap into the mind and are controlled by your thoughts, rather than any hardware, must come somewhere down the line.

Nick Alexander, MD of Sega Europe

Last-gasp launchtime for **Commodore** and **Atari**, **page 8**... **Sega** get into **V**irtual **R**eality with W Industries, **page 14**... **Nintendo** chop cart prices, **page 16**... **F**ull **M**otion **V**ideo and the Hollywood connection, **page 18**... **F**uture **E**ntertainment **S**how goes ticket only, **page 20**...

Cutting edge

The very latest **news** from across the entire world of videogaming

Make or break time for the old enemies

Crisis-stricken old foes Commodore and Atari are making one final, last-ditch attempt to achieve status as CD-based hardware manufacturers. Traditionally the best of enemies, the two companies are committed to launches that will, by their own admission, be their making or their breaking. Edge assesses their chances of success



Photograph: Commodore

Commodore's CD^{32} is basically an A1200 with CD drive. This machine – like Atari's impending 64bit Jaguar – has the power to make or break its producer. Commodore have thousands of the £300 machines in a warehouse ready to roll out across Britain

First to market in this last punch-up for the two ageing heavyweight champions is Commodore, who announced it would be entering the current commercial gorefest that is the European console market with their 32bit, CD-driven A1200-based CD^{32} games machine.

The £300 machine supposedly arrives in the UK in early September, with Commodore claiming it will be able to 'ship' 400,000 of the CD machines across Europe by the end of January '94.

Commodore unveiled the machine at London's Science Museum with a demonstration from technical vice president **Lew Eggebrecht** of the Full Motion Video (FMV: see page 18) unit. The CD^{32} was seen to be displaying a stunning rendition of Seal's dated Killer video.

Though the success of Commodore's new →

In context

Commodore and Atari were both built by the same man: Polish concentration camp survivor Jack Tramiel.

Commodore's first computer, launched in 1976, was the PET (incidentally, a bad name to call a computer in France, where 'pet' has some link with farting).

Early demand was so strong Commodore charged the full $795 ($795!) – and made the customer wait six months. (Things are different now. You don't have to pay in advance, though waiting is still fairly common.)

On Friday, 13th January 1984 Jack Tramiel resigned from Commodore. In July he bought Atari from Warner – who effectively sold the company to him by loaning him the money to buy it. Then, in late July 1984 Commodore bought a company. The name? Amiga Computer.

The Home Computer Wars were about to begin...

(Edge recommends The Home Computer Wars: An Insider's Account Of Commodore And Jack Tramiel, by Michael S. Tomczyk, Compute! Books 1984, ISBN 0-942386-75-2. Irritating style, but invaluable information and anecdotes).



Commodore's UK MD David Pleasance at the press launch of the CD^{32}, with new technology guru Chris Evans

← baby depends less on technical innovation than on sales, marketing and credibility, it was cautiously welcomed by the software community, though private comment is less enthusiastic than the public quotes.

Disappointingly the plastic casing has not met with universal acclaim – although the contents are generally thought to be 'the business.'

'We're currently working on *Sensible Soccer*: it's looking good,' was the comment from Renegade's **Tom Watson**. **Mev Dinc** of *First Samurai* fame, was also showing an interest. But biggest of all, Ocean's **David Ward** made sure the world knew *Jurassic Park* is going to CD^{32} at the same time as every other format (a bundle deal is pending licence problems: Commodore hasn't paid a penny for the Jurassic logo – **Edge**). With Ocean backing the machine there is no doubt that software support is substantial.



'We hope to take sales from the consoles, not from our own flagship machine [Commodore's A1200]'

David Pleasance, MD, Commodore UK

CD^{32}'s success would be very welcome to the UK software industry, not so much because of the protection CD offers against piracy – a problem that dogged anyone supporting the Amiga – but because Commodore's attitude in terms of pay-dirt is far more amiable than either of the big Japanese players.

'We are not making as much as we thought we would,' admitted one software supremo off the record; 'The Japs like to set tight margins, they like profit and so do we. This machine could make a difference.'

All in all, the CD^{32} looks as if it has the guts, the technology, the price and the software support to go up against Mega CD and the SNES in Europe. What it doesn't have, however, is the 'killer app' – the killer application such as the *Sonic* or *Starfox* (sorry, *Wing*) – that gives people a reason to buy instead of merely to dream.

Meanwhile, Atari

are committed to launching their make or break 64bit RISC-based 16-million-colour palette Jaguar console in America this Christmas at a sensational price of just $200 (£135). In this country it will be released, so it is promised, in April '94 at a still stunning £199 with one game and two keypads. But then, no-one's believed a word Atari has said for years unless supported by the evidence of their own eyes.

The core of the machine is the 64bit processor, a chipset Atari designed themselves in this country at their Cambridge-based research facility (using the old Perihelion transputer team). This chipset works in tandem with a DSP (digital signal processor) which enables the console to create fast texture maps and render and manipulate 3D polygons in real time; a system better than all but the very newest Japanese coin-ops.

Atari claim Jaguar has four times the processing power of the Mega Drive or SNES and is even more powerful than the 32bit 3DO system.

Atari go as far as boasting that the machine is easily on a par with the 3D engines in midrange Unix workstations. To this end the CPU chipset has been designed to cope with the rigours of full-motion video compression and various state of the art video effects.

Jaguar was initially developed in tandem with a 32bit games console codenamed Panther. 18 months ago, however, the Jaguar project moved so far ahead of its →

What is it?

Started by Nolan Bushnell, it almost single-handedly invented the videogame and helped make a $3 billion industry in the late 70s. It sold millions of machines and carts and looked all set to take over the world...



A CD^{32} edition of *Pinball Fantasies* has studio-recorded CD-quality music

CD32 software

Already no fewer than 12 publishers have publically pledged support for CD32. The following list comprises the games destined or in development for CD32:

Acclaim
Mortal Kombat
Bullfrog
Biosphere
Syndicate
Centaur
Fantastic Voyage
Flairsoft
1869
Oscar
Whale's Voyage
Grandslam
Nick Faldo's Golf
Gremlin
Hero's Quest
Litil Divil
Nigel Mansell
Premier Manager
Zool
Zool 2
Utopia 2
Hex
Global Chaos
Krisalis
Sabre Team
Soccer Kid
Manchester Utd 2
Maxis
Sim City
Microprose
Civilisation
Gunship 2000
B-17 Flying Fortress
Legacy
Millennium
James Pond 2
Diggers [more follows]

Continued next page



Photographs: Amiga Format

Commodore's technical vice president, Lew Eggebrecht (main picture) about to show off CD32's Full-Motion Video capabilities. Later on, Commodore were brave enough to let the press get their sweaty mitts on the shiny new CD32 units (inset)

it is...

Nolan Bushnell's company Atari. By 1983, however, the industry had all but disappeared. Atari made six million ET carts... and then bulldozed the lot into the desert. Cart prices plummeted and it lost $300 million in a year

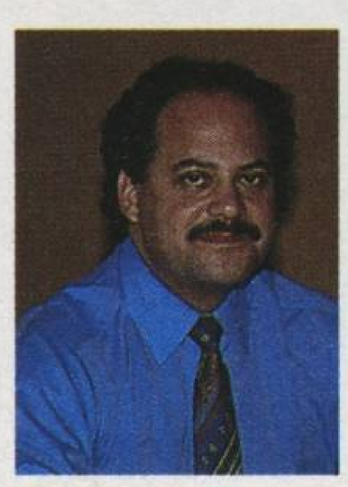
← little brother in terms of both technical capabilities and completion dates that it was mothballed and Atari's entire research effort concentrated on the bigger cat.

In a bid to cash in on the burgeoning CD games market, Jaguar will have a CD-ROM peripheral operating at double speed which will enable it to play Kodak Photo-CDs, CD+Gs and normal audio CDs. Other digital peripherals such as DAT units and modems can be connected to the console via a 32bit expansion port.

Perhaps most intriguing of all is this 32bit port's ability to receive data over the cable and telephone networks; a system which will enable users to download the latest games straight from software houses or from specialised console games TV networks – when it eventually happens.

Traditionally Atari products have been criticised for being short on custom chips – Jaguar includes almost nothing but custom built processors. The unique linking of a 64bit RISC chipset and a DSP will mean that Jaguar can create extremely fast graphics with zero slowdown while playing 16bit eight channel sound. The speed of these processors will mean that the CPU can get on with moving data around, while the DSP receives data from the paddles and any peripherals connected to the expansion port.

'Jaguar will revolutionise the state of home entertainment. It is clearly the wave of the future'



Sam Tramiel,
President of Atari

The 64bit CPU was created by **Richard Miller**, Atari's head of research and the same man responsible for much of the groundbreaking chip technology created in the early '80s for the Sinclair Spectrum. This chipset uses a new 0·5 micron ASIC process, utilising the smallest semiconductor chip technology available. This technology may be released as an add-on PC card to help minimise the cost of development. The DSP is also an Atari developed chip and shouldn't be confused with the Motorola DSP used in the Atari's Falcon.

This new chip enables separate sources to be processed simultaneously to replicate realistic sound effects and human voices – making it ideal for its intended multimedia applications.

The decision to include the 32bit expansion port is part of a tieup with giant →

Continued

Millennium cont'd
Daughters Of Serpent
Mindscape
Alfred Chicken
Liberation
Compilation disk
Ocean
Inferno
International Golf
Jurassic Park
Sleepwalker
TFX
Plattsoft
Amiga CD Football
Psygnosis
Microcosm
Renegade
Sensible Soccer
Uridium 2,
Chaos Engine
Sachs Entertainment
Defender Of
The Crown 2
Team 17
Alien Breed2
Body Blows
Project X
Super Frog
Thalion
Lionheart
Titus
Battlestorm
Prehistoric
21st Century
Pinball Fantasies
Pinball Illusions
Virgin
Dune
Musicolour
North Polar Expedition

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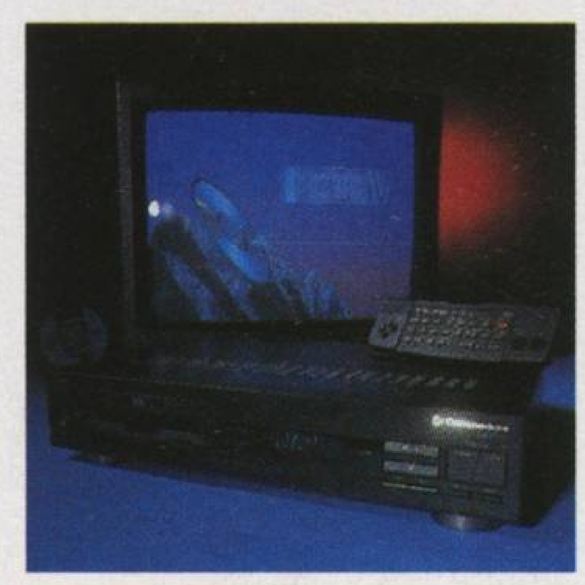
The financial status of Commodore

Commodore has already lost $273·6 million this year; it has closed down five subsidiaries and in June it seemed on the verge of collapse.

UK MD David Pleasance (third man to fill the role in a year) claimed the skyhigh losses were no cause for concern: 'It sounds strange, but this is the best news I've had for a long time,' he claimed.

His thinking was that Commodore has restructured itself into a leaner outfit, more equipped to compete in the console and CD markets. It has written off old technology making room for the ascendance of the CD32. We shall see...

CDTV crashes



Commodore's first foray into the CD market, CDTV, was a little less than a disaster. Commodore's erstwhile UK boss Kelly Sumner reflected on why CDTV failed:

'We got the basics wrong. Wrong price [£699], wrong spec, no support. It came out with Workbench 1·3 when we were launching 2·0 so the operating system was out of date. It could have done with a bit more RAM and I think it should have come with a built-in 3·5 inch floppy disk drive.

'On the software side I don't think we got the balance of titles right and I think there simply weren't enough of them'.

But apart from that, it was a winner.

The financial status of Atari

Atari's last full year figures, for the year ending December 31st 1992, showed turnover halved to $127·3 million and a loss of $73·6 million. Like Commodore, the firm talked of writeoffs and restructure, but it's still losing money.

For the quarter ending March 31st 1993, turnover was nearly a fifth of the total in the same period of 1992 and it suffered losses of another $2 million.

Despite all this, Atari claim to have $40 million (£27 million) available for the launch of the Jaguar. However, with both Sega and Nintendo competing for a share of the market, and both with similar marketing budgets, Atari have their work cut out.

Falcon fails



Atari's attempts to strike a blow in the technowars have been as dire as Commodore's, though they're slower to admit it.

Last year the firm launched Falcon – the machine, it claimed, to wrestle power back from the console brigade and put computers back on the map. (Ironic, since Atari invented the videogame market – and then, through inept management, sent it back to oblivion during the the mid-80s.)

It was going to get in all the major high street chains. So far it's made it into a miserable 12% of independent stores (source: CTW annual survey 1993).

← American multimedia group Time-Warner. Atari will have access to Time-Warner's huge library of video clips, opening the door to the inclusion of film footage which can be shown in its original state. The move is apparently a parry to Sony's forays into the video game market.

In order to avoid bringing the product to the market late (as if), Atari have contracted huge Jurassic Park inhabitant IBM to manufacture the units in a deal which will net the the ailing US giant a reputed $500 million. Although IBM's director of Applications Solutions said, 'This is a wonderful opportunity to work with Atari and their new system,' the *real* reason is that cheap Japanese PCs have crucified their profits and IBM is in big, big trouble.

Even so, it will take more than a deal with Atari to get the giant out of the quicksand: the Washington Post pointed out that $500 million, according to an analyst at Brown Brothers in NY, is 'not even two-tenths of 1% of [IBM's] revenue. I dismissed [the Atari deal] as trivial.'

The British

Jaguar package, supposedly retailing at £199 (but we'll believe it when we see it), includes one game and two keypads. These ten key joypads were originally created for Falcon and look like a hybrid of the Mega Drive and SNES varieties. But for a supposed multimedia machine, the first lineup of software for the Jaguar is suspiciously games-oriented: titles destined for the new MegaCarts include *Cybermorph*, *Aliens Vs Predator*, *Jaguar Formula One Racing* plus a pair of souped-up ancient Atari games, *Battlezone 2000* and *Tempest 2000*. And, of course, Jeff Minter will produce an interactive shoot 'em up with llamas in it.

As we go to press there are 25 Jaguars in the country, each with a development team. All the major software houses, with the exception of Electronic Arts (wouldn't sign the non-disclosure agreement), Gametek (MD is ex-Commodore boss **Kelly Sumner**) and Psygnosis (owned by Sony, in bed with Commodore), recently attended a product briefing at the Ramada Hotel near Heathrow. **Daryll Still** (Atari UK's Marketing Manager) told Edge that he was going to 'advertise the shit out of Jaguar' prior to and during its UK launch which takes place early next year.

Sega and Nintendo (combined UK marketing budget: £30m) must be quaking in their boots...

Jaguar software

There are several third-party developers interested in Jaguar, but with non-disclosure agreements still pending, the only definite titles are from Atari themselves:

Atari
Alien Vs Predator
Battlezone 2000
Cybermorph
Jaguar formula One
Tempest 2000

On release this month

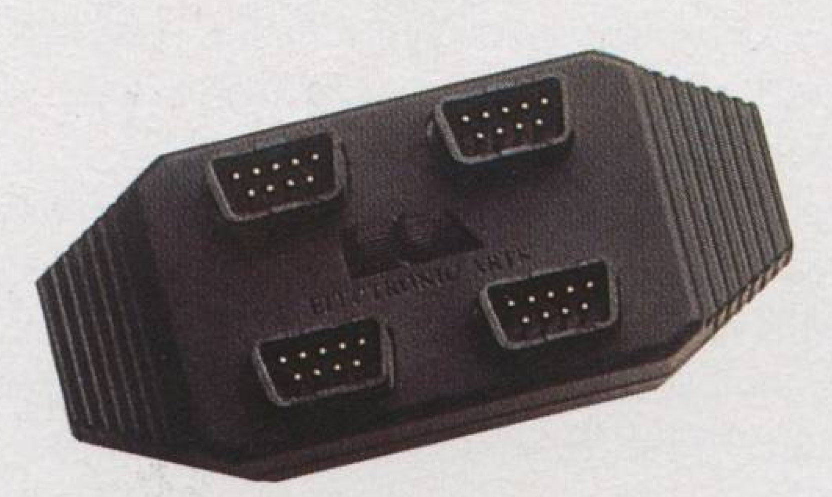
16 Mega Drive games reviewed in: MEGA
Highest rated: **NHL Hockey '94** 92%
Lowest rated: **Chester Cheetah** 47%

26 PC games reviewed in: PC FORMAT
Highest rated: **Day Of The Tentacle** 93%
Lowest rated: **Cogito** 24%

14 SNES games reviewed in: Super Play
Highest rated: **Sunset Riders** 87%
Lowest rated: **Player Manager** 55%

11 Amiga games reviewed in: AMIGA POWER
Highest rated: **Soccer Kid/Blob** 88%
Lowest rated: **Super Sports Challenge** 39%

EA enjoy fourplay



With multiplayer games gaining impetus on consoles everywhere, Electronic Arts are about to release their fourplayer adaptor for the Sega Mega Drive.

The unit (which has no snappy title as yet) works only with EA's fourplayer games, such as the up and coming *EA Soccer*, *General Chaos* and the latest addition to their ice hockey series, *NHL Hockey '94*.

The news broke too early for EA to decide on a price point or whether it will come bundled with a game.



***EA Soccer* (working title) uses their new fourplayer adaptor**

BUZZ words

virtual reality
oh yeah i fancy some of that **virtual reality** where you experience things without going out oh yeah you could have a **virtual reality** cup of tea and actually see the **virtual reality** tea sloshing about in the **virtual reality** cup it'd be amazing and they reckon soon you'll be able to have **virtual reality** sex just by putting on these giant goggles and strapping on this big pair of plastic pants that sort of stimulate you it'd be great you won't have to ever go out of the house unless of course you wanted something or your pants got stuck blimey that's a thought i wonder if they'd send out a **virtual reality** repairman or what?

Continued next page

SEGA: pirates of the airwaves?

Pretend TV piracy, or have Sega really got the kit to turn the videogames world on its head? Virtual theme parks, a 24-hour Sega Channel, the 32-bit Saturn console, a new multiplayer modem – this is the stuff that electric dreams are made of. Edge tunes in...



Sega would like you to believe that they've taken over your TV. Funny as it sounds, that's just what they'll be doing when the Sega Channel starts beaming games directly into your black box. It's happening in the US and Europe won't be far behind

Talk back

'The Mega CD player is a *Sonic* player, a *Donald* and *Mickey* player. With an inexperienced gamesplayer, you cannot afford to present radical gameplay options.'
Ian Heatherington, co-MD of Psygnosis defending the simplistic gameplay of *Microcosm* and *Dracula* (full Edge interview, page 79).
'The original scenario had to be approved by Spielberg... One thing Spielberg didn't want was another straight shoot 'em up or platform game.'
Programmer Andy Miah on *Jurassic Park*. Of course, would Steven know the difference? (See *Jurassic Park* prescreen, page 40).
'A Panasonic [3DO] player was running a car race game and the demonstrator told me it was a 'working' player. I pressed the disc Eject Button. There wasn't even a disc in the tray.'
Journalist Barry Fox on 3DO's dubious demo system (world exclusive 3DO feature, page 50).

Sega's weird and wired Mega CD ads have the premise that Sega has taken over your TV, invaded your life, become common culture currency, and not just a reasonably successful console manufacturer. Ridiculous. Or is it?

Sega is looking to move out from under the TV and right into your hearts and minds with ventures that will be impossible to ignore. It is already planning to create what that Pirate TV ad was hinting at: a Sega Channel. The firm has linked up with **Time Warner** (the largest entertainment company in the world) and **Tele-Communications Inc** (TCI) in the US, and together the companies are launching a new cable television company to pump Sega games through a decoder box directly into the TV on a special channel.

The project begins in earnest in September with trial runs in 350,000 households across 13 US cities. The cost of subscribing is \$10-\$15 (£7-£10) a month, plus \$20 (£30) for a lead linking the Genesis cart slot and the cable TV receiver.

Ultimately, Sega could have access to 20 million cable TV owners in the States – and Europe may not be far behind. European product director **Barry Jafrato** told **Edge**, 'The penetration of cable isn't high enough in the UK, but you can do exactly the same thing using satellite technology.

'We're already talking to a number of satellite broadcasters, including BSkyB, of →

Sega World's mascot – not the best bloke to play with a beach ball



Attract mode

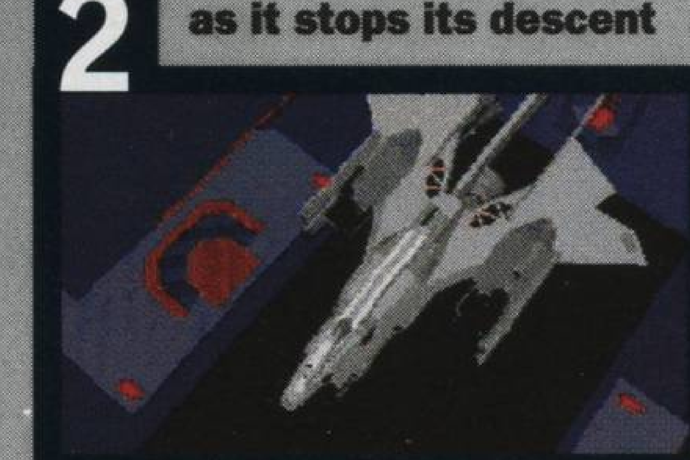
Every month, Edge will be paying homage to the miniature film industry that is ingame attract modes.

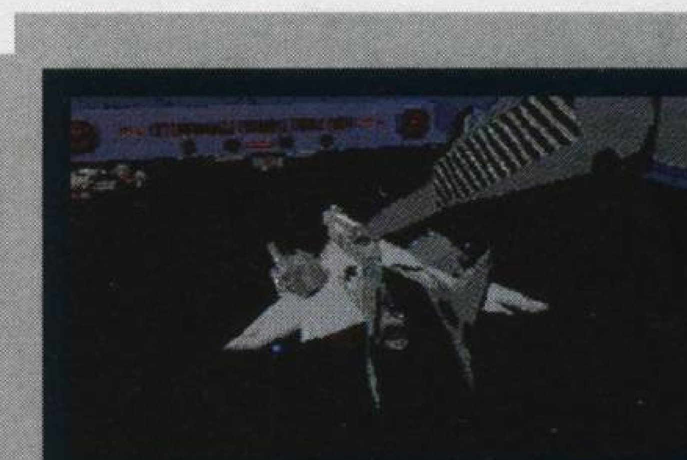
First in the series is *Silpheed* (see testscreen, page 94). This amazing looking Mega CD title boasts a 3D rendered intro which wouldn't look out of place in The Last Starfighter. We join the action just after you've boarded your ship...



1 (Scene 1) Inside the belly of a carriership, the camera pans around your heavily armed fighter – an SA-77 Silpheed. The camera view swoops up and overhead, as the ship begins its descent down a dizzying shaft to the docking bay beneath

(Scene 2) Cut to an overhead view of the ship, as the docking bay doors slide slowly apart. The inky blackness of space resides beyond, with a scrolling backdrop of twinkling stars. Cut to a forward view of the craft as it stops its descent





3 (Scene 3) With the doors fully open, the SA-77 ship is lowered into the void on a giant lever assembly. The camera pans around, showing off the sick 3D visuals, as the ship finally comes to rest and is locked in place

head to head

'My friends over at Sega haven't found a market for CD at $299. [Mega CD] is dead in Japan, dying over here [the US] and suffering in Europe'

Peter Main, Marketing vice-president, Nintendo Of America

'Right now, in this marketplace, Mega CD is an advanced machine. It's a very big step ahead of the Mega Drive. But of course, it's not the end of the story'

Nick Alexander, Managing Director, Sega Europe

Centre of attraction

It's big (24,000 sq ft to be precise). It's down by the sea. And it's got all the hottest Sega arcade titles. What is it? Well, it's called Sega World and it's in Bournemouth.

As well as all the latest Sega arcade titles (*Virtua Racing* and *Title Fight*), you can have a go at *Sonic Strike* (a scaled down ten-pin bowling alley), get your Sega goodies at the Sega Shop and even have a snack at the built-in Burger King.

There'll be more and more of these centres popping up all over the country, and a similar, smaller Sega World games centre is already planned for Colindale in North London.

← course. There would be a decoder box available and the channel would be accessible to anyone that had a dish.

'In a similar style to movie channels, there would be 20 or 30 back catalogue titles available but also one- or two-level previews of newer games.'

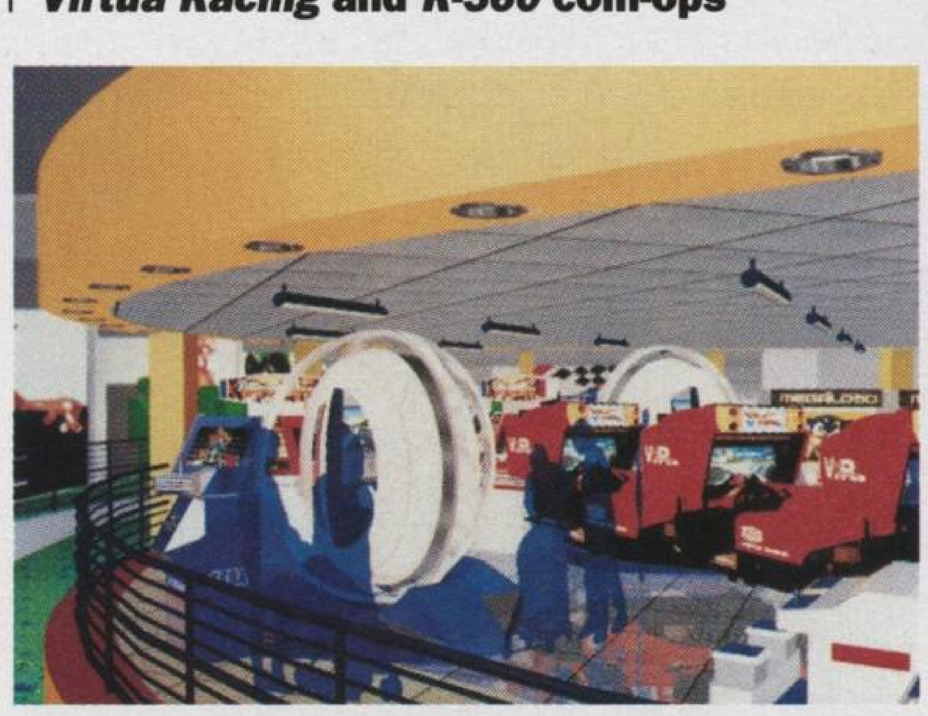
The European Sega Channel will not be in operation this year, but a mid-1994 launch is possible.

About the same time we will see the benefits of Sega's recent link with W Industries, virtual reality pioneers. Headed by the enigmatic Dr **Jon Waldern**, W Industries is the company behind the coin-operated virtual reality systems at the Trocadero in Piccadilly.

The WI/Sega project is being kept under wraps at the moment, but it will probably first take shape in the form of laser-disc 3D cabinets, initially appearing in Sega's new games centres. The European roll-out for games centres featuring huge simulators and mind-blowing VR is, according to Jafrato, 'as fast and as frequent as we can find the out-of-town sites'.

This new style of arcade, called Family Entertainment Centres, are next on Sega's list of world-dominating activities. They are already hugely popular in Japan and the first European FEC has just opened in Bournemouth, covering a floor space of over →

A computer image of the Driving Edge Zone, showing the position of Sega's *Virtua Racing* and *R-360* coin-ops





And here's an *R-360* at Sega World just waiting for you to go and shove all of your hard-earned money into it

Who is it?

This person was born in Pasadena, California. At high school he created his own discipline, majoring in strategy and applied game theory. He designed games and knew he would start his own company; he even knew when – 1982

4 **(Scene 4) Cut to a wide angle view. The camera pans down, revealing another identical Silpheed SA-77 ship in the distance. It becomes clear that yours is not the only one being prepared for the impending battle**





5 **(Scene 5) Close-up on rear section of SA-77 as the boom arm disengages and moves out of view. The Silpheed's twin engines kick into life, glowing with fiery energy. Cut to a wide angle as the fighter slips silently away from the massive carriership**

6 **(Scene 6) The camera pans around as your ship blasts through space. In the distance you can see other carrierships, making up a substantial fleet. Each of the carriers is also releasing its cargo of Silpheed fighters**





7 **(Scene 7) Cut to a point in space ahead of the fleet. With the carrierships in the background, a swarm of SA-77's buzz the camera in a dramatic flypast. The fighters hurtle past and shrink into points as they head for their destination and the battle to come. Game on...**

Continued next page

← 20,000 square feet.

On a global scale, Sega is already a major player in the arcade market. It currently operates well over 1,000 Amusement Centres worldwide. But the FECs are a big step forward from those centres. Jafrato explains: 'These are not places for wayward youths. These are for the whole family, with cafes and shopping, things like that. They're also huge, designed to feature machines like the AS-1 and R-360 in the sort of space that they need. They'll be more like our own mini-Disneylands.

'But there won't just be Sega machines, there'll be over 100 different machines with all the most popular titles from other manufacturers, like *Street Fighter II* for instance.'

The centres will also feature the new arcade version of *Sonic*, cased either in its own custom cabinet or as a slot-in board for a standard cabinet.

The Family Entertainment Centres are just the tip of Sega's entertainment iceberg. Sega of Japan has been busy headhunting executives in preparation for virtual reality theme parks, the first of which is due to open in Osaka at a cost of ¥3 billion (£19 million). Sega hope to have 50 such theme parks in Japan by 1997, and more in Europe and the US.

Virtual reality will be playing a big part in the future of these new centres. And the deal with W Industries lies at the heart of this expansion, as Dr Waldern explains; 'We're licensing our operating system to them, and linking up all their hardware to make it run effectively. We're also writing all the games to go on their new platform.'

The deal between the two companies is worth £3·2 million over two years. The earliest manifestations of Sega's virtual reality kit will be in its games centres, or as Waldern describes them, in Location Based Entertainment (LBE) centres. But work is also underway on games for the home.

Waldern is unequivocal on the future of the games scene generally. 'Television and video technology will merge. Multimedia itself will merge into that, in other words multimedia will provide the inherent technology for home and interactive TV, interactive games. They'll all become one and the same thing. That'll all get linked up on Networks, except in the UK, because we're all so backward here.'

'Soon everything will all be linked up on Networks – except in the UK, because we're so backward here... '



Jon Waldern, chairman of W Industries

But how will all this affect your humble Mega Drive, the not-so-humble Sega VR peripheral and the not-very-humble-at-all 32-bit Saturn console?

The biggest impact will be on Sega itself. Consoles have been growing fast these last few years, but it can't last forever. Sega is establishing itself in other markets; it's all about eggs and baskets. As Jafrato concludes, 'we're not just a console company, we're a multimedia leisure company'. And who's to argue?

it is...

Trip Hawkins. The company he founded – Electronic Arts – went on to become the biggest publisher of leisure software in the world. He then left EA to found the 3DO company, which has yet to sell a single unit, but is worth $300 million

Continued

Separated at birth...

The first in an on-going series, in which Edge highlights some of the startling similarities between games currently on sale, and some that appeared months, if not years, ago



Final Fight

Released: Spring 1991
On: Super Nintendo
From: Capcom
Style: Scrolling beat 'em up
Source: Coin-op
Players: One
Features: Bosses, special moves, bonus stages
Problems: Limited, too easy



Batman Returns

Released: Spring 1993
On: Super Nintendo
From: Konami
Style: Scrolling beat 'em up
Source: Movie licence
Players: One
Features: Bosses, special moves, bonus stages
Faults: Too easy, limited

Next stop... Saturn?

Sega's next-generation machine, the Saturn, boasts a 32-bit RISC chip running at 27MHz, 24-bit graphics and, not surprisingly, a polygon generator.

This chip can display and animate 16,000 polygons per second – which doesn't sound so impressive in comparison to *Virtua Racing*'s 180,000 polygons per second.

Interestingly, the Saturn graphics chip also includes an alpha channel for transparent colours and digital compositing – ideal for games containing video footage.

Considering the amount of information needed to feed these data-hungry processors, rumours of it being a CD-only machine had better be true.

However, given the considerable slippage of the Mega CD, Sega's planned launch date of 1994 seems unlikely.

Data stream

Number of games sold in average shop 15-22/12/92: **153·3**[1]
Number of games sold in average shop 18-24/07/93: **50·1**[1]
Value of UK console market 1992: **£566m**[2]
Value of UK console market 1993: **£750m**[2]
Value of UK CD market 1992: **£345m**[3]
Value of UK video sell-through market 1992: **£444m**[4]
UK annual console sales in Nov and Dec: **70%**[2]
US Game Boy sales to over 18s: **40%**[5]
Number of Master Systems in UK 1/01/93: **1,100,000**[6]
Number of NES units in UK 1/01/93: **1,150,000**[6]
Number of Mega Drives in UK 1/01/93: **1,050,000**[6]
Number of Super NESs in UK 1/01/93: **600,000**[6]
Mega Drive launched in UK: **August 1990**
SNES launched in UK: **April 1992**
Number of Game Gears in UK 1/01/93: **400,000**[6]
Number of Game Boys in UK 1/01/93: **1,253,000**[6]
Worldwide sales of *SF II* (launched June 1992): **6,000,000**[7]
Nintendo pretax profits 1992-93: **¥163·7bn (£1bn)**[8]
Number of Nintendo employees: **900**[9]
Profit per employee: **£1m+**[9]
Companies in Japan more profitable than Nintendo: **1**[9]
Growth of Nintendo 1992-3 over 1991-2: **4·8%**[9]
Growth of Sega 1992-3 over 1991-2: **64%**[9]
Copies of **Edge** one printed: **47,667**

Sources [1]Gallup Chartalk; [2]Euromonitor Market Research Report; [3]*Observer* report 11/10/92; [4]*British Film Institute Film And TV Yearbook 1993;* [5] Nintendo of America; [6]CTW market share reports; [7]Capcom President Kenzo Tsujimoto, Nikkei Weekly; [8]Original estimate by Euromonitor of £1.1bn revised downwards by **Edge**; [9]Nikkei Weekly 12/7/93

PC Engine powers-up



The PC Engine Duo and Duo-R are to get a huge boost in performance from a new RAM card being developed by NEC.

16 megabits of DRAM will be included on a new system card which effectively increases the available RAM from a measly 2 megabits (256K) to a vast 18 megabits.

The card will be released in December at ¥12,800 (£82), with Hudson Soft converting SNK's *Fatal Fury 2* (above), *World Heroes 2* and *Art Of Fighting* to take advantage of the new large-memory format.

Fatal Fury 2 will be out before the end of the year and all Hudson's games are expected to cost around ¥6,000 (£38). Current screenshots are looking better than the SF conversions, too.

Sega unveils The Edge connector

Sega users in the US will soon be able to get a device that enables them to play games against their friends over the phone. It's called The Edge (no relation), and it's the result of an agreement between Sega and US telecommunications giant, AT&T.

Made up of a modem and a speaker phone, The Edge can also transmit voices so you can talk while you play. It plugs into the game slot on the Sega, and then into the game cartridge and the phone socket.

The Edge also has four slots on the front for memory cards so you can save gameplay. Electronic Arts, Tengen and Sega themselves are all planning to make their games 'Edge-compatible'.

The Edge will be available in the US by next summer at a retail price of between $100 and $150 (£65-£100). A UK launch is likely soon after.



The Edge connects Mega Drive players over the telephone lines

i wish...



Archer Maclean

'... that Japanese 16bit consoles had the internal design structure of the A1200, instead of the ridiculous bottlenecks and hardware restrictions they all share. I can see the historical reasons and economic reasons for this evolution, but it really gives us games designers/programmers a headache.

'The PC is almost as bad. The theoretical processing power of a leading edge PC is phenomenal, yet it is hampered by having to retain compatibility with some ancient architecture from 10 years back, and all sorts of bus speed restrictions, and datapath widths etc.

'It's almost like a mechanic putting a Formula 1 engine into an ordinary Citröen 2CV with skinny little wheels. PC hardware designers have come up with all sorts of fine-tuning methods and turbocharged solutions for various hardware areas, but if they started with a fresh sheet of paper, the processing power-to-cost ratio (and future compatibility solution) could offer one small step for man, and one bigger leap for PC Power.'

Archer Maclean is the man behind *Dropzone*, *Jimmy White's Whirlwind Snooker* and *Archer Maclean's Pool*. He's currently working on the Mega Drive version of *Snooker*, *Pool* on various PC platforms and is helping on the design of an eight megabit version of *Super Dropzone* for the SNES. The original eight-bit *Dropzone* will also be appearing on Sega's Master System and Game Gear.

Bad press

Taking one week at random, Edge monitored the press for their videogame coverage. Here are two of the more depressing 'highlights'

'Boy gives kid the elbow

One of Britain's best young tennis hopeful (hopeful being the operative word here, presumably) has been banned from playing with his Game Boy and Super Nintendo after he ended up in agony.

Sports osteopath **Raymond Perrin** said: 'I'm sure the injury was caused by excessive use of videogames.' Oh well, that proves it beyond all doubt then...

source: Clwyd Evening Leader, 10/6/93

Sega World worries

Parents are concerned by the possible financial and psychological damage that could be caused by Sega World (see news story, page 12).

So says the Independent, anyway, though it doesn't actually quote any of these desperately concerned parents as such. It does, however, quote **Ian Brown**, psychologist at Glasgow University, as saying that studies prove that a 'significant minority' of people will become addicted to videogames.

'If the addiction is not fed,' he warns, 'it can lead to delinquent behaviour. More research is needed' – now there's a surprise – 'and parents are right to be cautious.' Right Ian, the grant's in the post...

source: Independent, 12/6/93

Night Trap nightmares

Mother of three **Jacqueline Nicholls** organised a protest against Sega's Mega CD game *Night Trap*, not on the entirely reasonable grounds that it was crap, but because her children (12, 11, 8) 'suffered nightmares after seeing scenes from the 15-certificate film during a shopping trip.'

Mrs Nicholls also met her MP **Tony Marlow**, and said the meeting had gone 'very well.' Mr Marlow said he'd written to the Home Secretary and the Trading Standards about it, 'but he had not heard anything from them.'

Clearly a man who can get things done.

source: Northampton Chronicle & Echo, 14/6/93

'Mario made me an addict'

Embarrassing halfpage in one of the alleged quality papers: middle-aged hack tries videogames, likes them. Shock, horror. Final sentence: 'There is no alternative: I shall play *Dr Mario* one last time and then I shall panic.' Oh you are a card, etc.

source: Independent, 16/6/93

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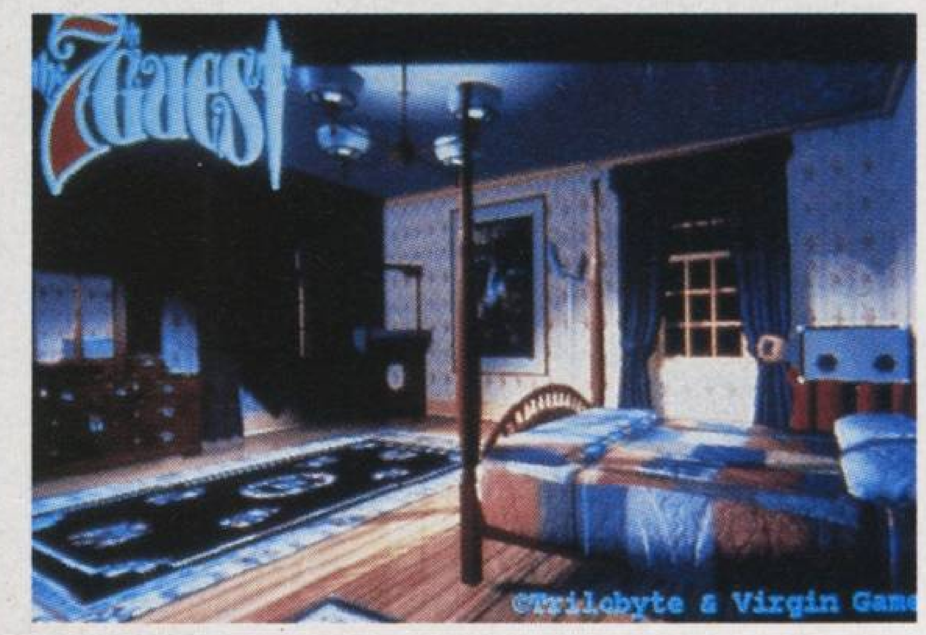
Hollywood enters the FMV arena



Donald Sutherland hits the small screen in Virgin's *Conspiracy* on CD-ROM



Voyeur on Philips CD-i – a Hitchcockian thriller, starring Robert Culp and Grace Zabriskie. Vaunted as the first interactive movie, over 47,000 frames of M2 broadcast quality video were captured, representing 65 minutes of live-action footage



Virgin's CD-i version of *The 7th Guest* will be the first game to use FMV

With new standards for full-motion video and linear video CDs, the dream of films on CD – and interactive movies – has just taken a step nearer. Before long you might be watching Jurassic Park 2 on your console...

There's been a lot of mention of FMV recently. Full-motion video sounds like hype to sell more machines, but it's important for two reasons:

The newer CD-based multimedia machines – CD-i, 3DO, CD32, Jaguar and Sega's Saturn – all have the ability to display 24-bit images in 16·7 million colours, and are thus capable of showing full-motion video – effectively films on CD. Most companies are opting for MPEG (Motion Picture Expert's Group) decompression, so at least they all have some sort of standard between them. JVC, Matsushita, Philips and Sony have also decided on a standard linear digital format, called Video CD, so consumers won't have to go through the VHS/Betamax/Video 2000 war again. Hopefully, no matter what machine you own, you can buy any movie CD and it will play through your system.

Secondly, with the advent of FMV, the inhabitants of planet Hollywood have a new toy to play with. Many of the major studios are becoming actively involved with multimedia – movie tie-ins really *are* movie tie-ins, with extra footage being filmed for inclusion in games. **Sylvester Stallone** has already been filmed against bluescreen for Virgin's version of Demolition Man, The Lawnmower Man 2 is being developed in conjunction with the film and incorporates some of the computer generated VR footage, and Ocean have a major film licence for '94 where their programmers will practically be part of the production team.

For years game developers have been struggling to introduce greater realism into →

Interactive hyperbole

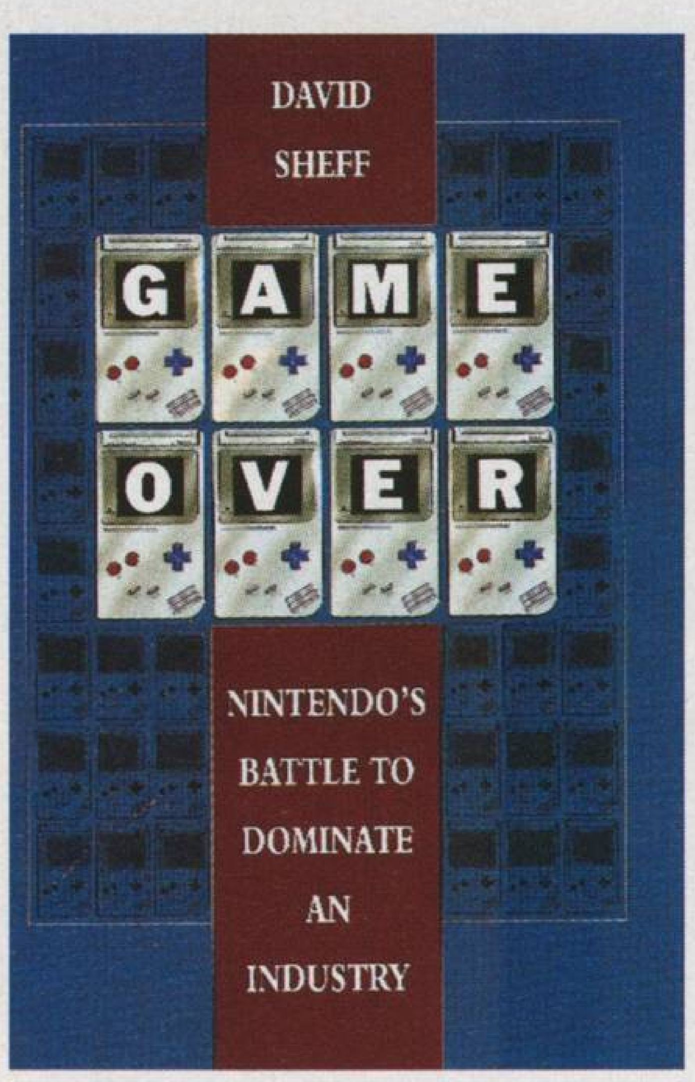
American companies Media Vision and Hyperbole Studios have joined forces to develop CD-ROM multimedia titles, and have announced *Virtualcinema*: 'the synthesis of the film and the novel'.

***Virtualcinema* is a software engine, which combines closeups of live actors providing 360˚ perspectives of their environment, and access to the internal thoughts and memories of the characters.**

Hyperbole has signed the film industry's first 'interactive performance agreement' through the Screen Actor's Guild, allowing 30 actors to perform for their first interactive title.

In the game you have to learn who you are through interacting with other characters. The game has three layers: 3D exploration, social interaction and the study of the character's thoughts ad memories. Sounds... interesting.

Game Over for Nintendo



Game Over is compulsory reading for anyone that's played Nintendo – or any videogame for that matter

Edge doesn't intend to review many books, but Game Over – Nintendo's Battle To Dominate An Industry, by **David Sheff** (Hodder & Stoughton ISBN number 0-340-59557-4) is a worthy exception. This 445-page hardback chronicles the rise and rise of Nintendo, from lowly playing card manufacturer to omniscient global corporation, all in minute – often painful – detail.

However, the birth of Nintendo is intimately linked with the conception of the videogame. So for £19.99 you'll learn everything there is to know about Nintendo and the entire videogame industry up to the present day (so watch out for 'Everything You Always Wanted To Know About Nintendo' features in other games magazines). Intriguing stuff.

Edge rating: **nine/10**

Aladdin x2 for Xmas



***Aladdin* on the Mega Drive contains real Disney animation**

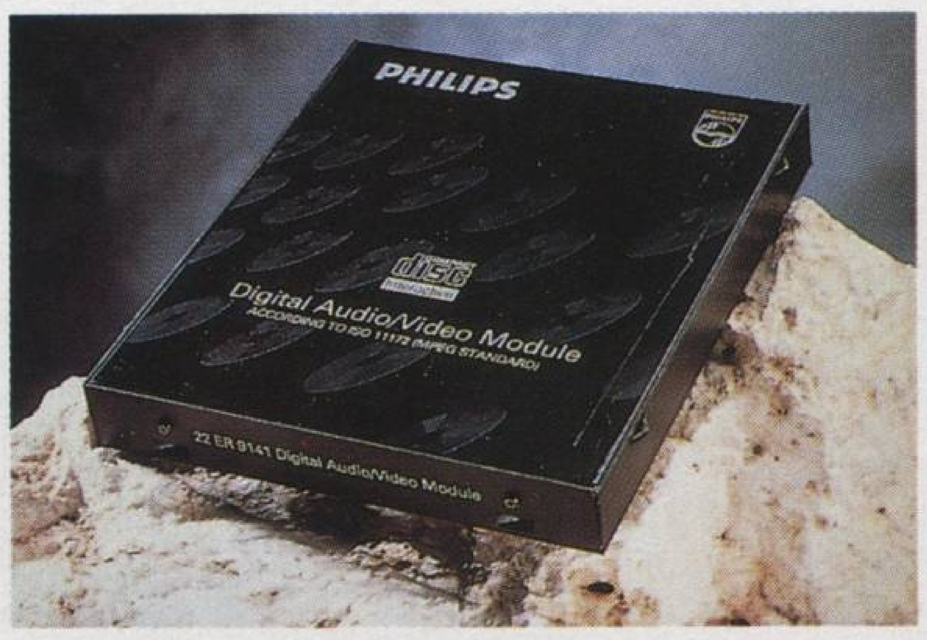
You've probably heard about Aladdin's success in the States, it being second only to Jurassic Park in box office takings an' all that. But with the film being held over for a Christmas release in Europe (there are dinosaurs out there, you know) Capcom and Sega are gearing up their respective SNES and Mega Drive versions for a simultaneous seasonal release, worldwide.



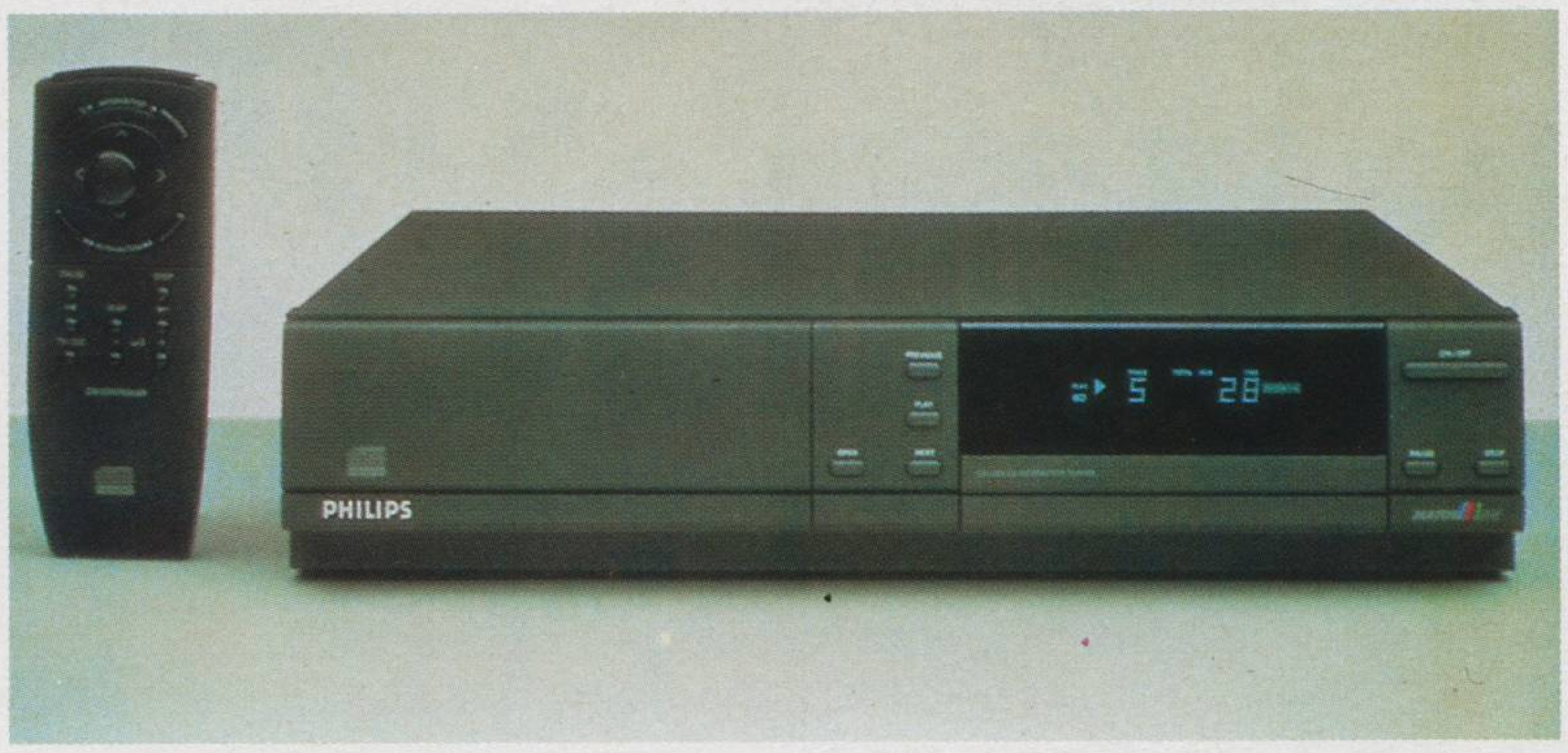
And the similarly lush-looking SNES version from Capcom

And you can bet that there'll be a swordfight as to which company makes the most noise, *and* makes the best game of the film.

In one corner we have Virgin's goldenboy programmer, Dave Perry, and a whole horde of Disney animators shaping the (it has to be said) stunning Mega Drive version. And in the other we have Capcom doing what they do best. How about it THQ?







Philips' CD-i player (above) is the first machine to go the FMV route, using Philips' own FMV upgrade cartridge (top left); the 1Mb MPEG cart simply slots in the back of the player (top right). First film available on CD? Frauds, starring Phil Collins

← their games, but have been held back by data storage technology. Never mind whether the hardware can handle million-colour graphics, hi-fi sound and high-speed animation – the data alone would take hundreds of floppies, or cartridges the size of car batteries.

But CD-ROM is the answer to all that, with its huge (650Mb) storage capacity. Indeed, there's so much space that, with state-of-the-art compression techniques, it turns out you can get up to 72 minutes of video footage on a single CD.

All you need now is the hardware for getting off the CD and into your computer...



'Game designers shouldn't be looking in the direction of Full Motion Video for all the answers'

Stewart Bonn, Vice President of CD-ROM development at EA America

CD-based games don't work like normal games. Ordinarily, code is copied off a disk and into the machine's RAM, where it's stored, manipulated, and generally messed around with. But RAM isn't cheap – and certainly not the sort of RAM needed to cope with real-time video clips. So developers get round this by using the CD drive as a 'player', where the video clips are effectively read straight into the machine's display. No delay, no interaction – just like watching a video. Except that you don't have to wait while the tape rewinds to find the clip you want, and a clip can be aborted or switched at the touch of a joystick button.

Until this year, full-motion video, and its promise of VHS-quality output has been a dream. The sort of computer hardware home users can afford isn't set up to handle millions of colours onscreen at once, and CD-drives aren't set up to recover real-time video clips from a CD.

The latter involves pulling frames off the CD at the rate of 25 per second – the PAL refresh rate. Not only that, you have to compress these frames massively to fit the current maximum of 72 minutes of full-motion video on to a single disk. The compression is handled by the powerful MPEG system (version 1: MPEG2 is already in the works). But it means that the individual video frames have to be decompressed on the fly – in between screen refreshes – which is a hell of a job for the hardware. But it's perfectly possible. It means that each video frame occupies a maximum of 6K on disc, which limits the playback quality, but the manufacturers insist that it's still better than VHS, even if it's not as good as broadcast quality. (From what **Edge** has seen, VHS has little to fear.)

Philips will be the first to enter the FMV arena later this year when they introduce a plug-in FMV cartridge for their →

Where is?

Last year there were masses of people trying to get in, and the press reported skirmishes between frustrated punters who were queueing. Sega and Nintendo were under the same roof, along with Philips and Commodore

Super NES gets ancient Capcom RPG



***Eye Of The Beholder* on SNES. Not *Breath Of Fire* at all...**

Looking for a decent RPG for your SNES? Maybe one that's in English so you can understand it? Well, it's Capcom to the rescue.

Remember that dreamy looking *Breath Of Fire* game they released in Japan last year? That really gorgeous-looking 12-meg one with superbly designed characters, a huge quest, and great sound?

Well... they're still not going to release it over here. Instead, the States and Europe are going to get *Eye Of The Beholder* – the old *Dungeon Master* clone that you could pick up for about a fiver on the Amiga. Cheers, Capcom...

Continued next page

News



The CD-i version of *Microcosm* uses the FMV unit to display stunning rendered sequences in 24-bit colour. For the full, exclusive story on *Microcosm*, see page 70

Sega opt for coin-op realism

Sega has signed a deal with US-based Martin Marietta Corporation to use its high-resolution simulation technology in the development of a new, as yet un-named, multiplayer arcade game.

The phototexture technology is designed to produce continuous lifelike imagery drawn from photographs. It works by generating a visual database system to create photorealistic 3D moving models. Sega expects the system to produce new games as visually compelling as movies. And to make money as well, probably.

it is...

Earls Court, site of the Future Entertainment Show – the biggest videogame event in the UK. The sequel takes place from 11th-14th November, but has had to change its venue due to its size. This year? Grand hall, Olympia

Continued

← existing CD-i machines. Several FMV games are to follow, combining interactive gaming with 'real-life' video footage – one of the first (scheduled for this autumn) will be *The 7th Guest*, which has already staggered PC reviewers with its visuals. Will it stagger even more using full-motion video?

Running Philips a close second will be Commodore, with an FMV add-on for their new CD³² console. The Commodore unit is expected to sell for around £200, the CD-i FMV cartridge for around £150.

Both the Commodore and Philips FMV systems are based on the MPEG compression system. Sega are also getting into FMV but are going it alone with American company SuperMac's CinePak system – the video compression software used by Apple and Microsoft. CinePak is purely software-based, but the intention is just the same: to market the Mega CD as an FMV-capable machine.

Treating FMV as a games orientated development is a mistake: the implications are far wider. Those two great leviathans the film industry and the music industry are more than a little interested...

In June this year Philips and Paramount Pictures signed a deal which meant that films would appear on CD-i as well as video. And part of the deal was that Philips would be exploring the possibility of interactive versions of films, too.

At the same time, Philips announced 13 new FMV music titles – you don't just get to listen to an album on CD, you get to watch it too.

Philips are pushing their CD-i system for all it's worth (and a bit more besides, to be honest). Their technology isn't pioneering; their marketing is. But even so, they're only pre-empting something that was going to happen anyway. The 12cm CD looks like being the universal storage medium of tomorrow – it's happened in music, it's happening in games and it will shortly happen with films.

And these three huge industries are on a collision course. Games developers have spotted the appeal of high-quality video sequences, music publishers are aware of the appeal of sound plus vision, while film makers have spotted that the possibility of 'audience participation' in interactive films.

FMV will never be a substitute for gameplay, but the evidence of pseudo-FMV titles like *Night Trap* suggest that it can certainly heighten the experience.

Footnote: Nimbus, the UK's largest CD manufacturer, is sitting on a double-density CD system which allows up to 2·5 hours of VHS-quality FMV on a single disk. The hold-up? Philips currently have a legal stranglehold on CD formats...

Pioneer LaserActive becomes reality



Pioneer's LaserActive system. Plug-in modules enable it to play Mega Drive, Mega CD, PC Engine, PC Engine CD and LaserActive games. Talk about videorgasms...

Pioneer's joint venture with NEC and Sega, to produce a multiplatform home entertainment system, has already reached Japanese consumers.

First announced back in February this year, LaserActive goes on sale in Japan on August 20 (tomorrow, if you've bought **Edge** on its day on release) and is expected to retail at a wallet-trembling ¥89,800 (£575). And that doesn't include any of the hardware you'll need to play games.

In many ways, Pioneer have offered Sega and NEC a viable route in the face of the looming power of 3DO. In it's fully expanded form, their LaserActive player can run LaserDiscs, audio CDs, CD+Gs, Mega Drive carts, Mega CDs, PC Engine HuCards, PC Engine CDs, (and here's where it gets interesting) new Sega Mega LD games and new PC Engine LD-ROM^2 games, too. And these new formats are being supported by NEC and Sega to take advantage of the full-motion video capabilities of LaserActive.

But, and here's the snag, LaserActive needs additional hardware to play games. In the front of the unit there's a slot where a choice of different modules can be plugged in. The first one costs ¥39,000 (£250) and allows you to play Mega Drive carts, Mega CDs and, when they appear, Mega LD games.

The other module, for NEC games, costs a more modest ¥20,000 (£128) and lets you play HuCard games, Super CD-ROM^2 games and, again, when they appear, LD-ROM^2 games.

The games modules contain the Sega and NEC circuitry for running standard cartridge games and CD/LD games, while the LaserActive's own modified drive and laser pickup handles all the different kinds of video, audio and games discs.

No doubt about it, the LaserActive is a great idea for the ultra-rich gameplayers who want to get the best of Sega and NEC game systems, without the hassle of separate units, cables and plugs.

But Pioneer's hopes for the system are naturally looking beyond this primary function of playing existing games formats. So, with companies like NEC, Sega, Taito and Hudson Soft developing LaserActive compatible Mega LD and LD-ROM^2 software, we can expect to see Sega and NEC games using that dangerously un-interactive element, full-motion video, with the first software expected in October.

Which, low and behold, is 3DO's launch date. So: low-powered multiplatform games system with high quality full-motion video (LaserActive) vs high-powered single format games system with low-quality full-motion video (3DO). Any bets?



The first dedicated LaserActive game is from Pioneer. This amazing science fiction shoot 'em up, features lovely rendered robots... like this one

When is?

Hundreds of people are disappointed when, due to a lack of foresight, they fail to appear at a certain location on a certain day. The thing they were seeking has gone, never to return. Lives are ruined: the future an empty husk



Inflight driving

Sky-tired Japanese businessmen can now ease away the stresses of jetflight by getting all hot and bothered on Mega Drive games.

Japanese airline JAL have struck a deal with Sega to install the Sega Mega Jet. The Game Gear-sized unit accepts standard Japanese Mega Drive carts and is linked to a small LCD screen which folds out of the seat arm, and also doubles as a standard TV.

There are 24 Mega Jets on each flight – presumably stashed in first class – and there are four titles to choose from including *Super Monaco GP 2* (good job you can take your own, then).

Nintendo cut cart costs

Nintendo have announced pricecuts on seven pre-Christmas titles, and a tempting new Super Nintendo bundle.

With Nintendo's new pricing policy, seven new sub-£40 SNES games will hit the shelves in December, including *Battletoads, Bubsy, Yoshi's Safari and Nigel Mansell's World Championship.*

***Street Fighter II Turbo* will also appear early November – and almost certainly cheaper than the original *SFII* which steamed in at a hefty £65.**

From October, the SNES will be sold in the *Super Mario All-Stars* pack, retailing for £130. The compilation cart (testscreen, page 86) provides four-game appeal with one-cart cost.

Mega Drive and PC Engine owners would do well to swallow their pride and take up this bargain (shame that it's the slow, Cinemascope display PAL machine).

Continued next page

The second Future Entertainment Show

Grand Hall Olympia

Thursday 11th-Sunday 14th 1993

As surely as there'll be a Jurassic Park 2, so there's to be a sequel to last year's rip-roaringly successful Future Entertainment Show. From Thursday 11th to Sunday 14th November, Olympia will again play host to the liveliest, loudest videogame event in the UK



Freeplay heaven: play all the latest games until your eyes bleed



National Computer Games Championship finals gets the bigscreen treatment

This year's show is being staged at Olympia – which is 40% bigger than last year's venue, Earls Court 2. This is just as well because there are going to be some major attractions. With weeks left to go before the show, the list of exhibitors already looks like a 'who's who' of the entertainment industry.

Some of the big names at the show include **Sega** (who are set to launch their new Mega CD2 system), **Nintendo** (with *SFII Turbo* and *Mario Collection*), **Commodore** (and their amazing new CD^{32} console) and **Philips** (their CD-i system will be the first to incorporate Full-Motion Video). These four are at the cutting edge of today's cartridge and CD technology. What they're developing this year, you'll be playing next year...

Apart from the latest technology and software, visitors also stand to pick up some real bargains. Many of the industry's top hardware and peripheral manufacturers will be there, together with some major mail order suppliers. At last year's show you couldn't move for smug people carrying brand new A600s/A1200s under their arms – what's going to be this year's hot bargain?

At least ten people won't be interested in new hardware, though. These will be the ten regional finalists for this year's National Computer Games Championships, organised and run by **Future Publishing**. The finalists will already have each picked up three top videogame machines just by getting this far.

The finals will be held at the show, and the winner will be walking off with a staggering £10,000 cash, while the runner-up receives a still-enviable £4,000.

The competition is being run the same way as last year, with regional heats held at local Virgin Megastores. This year, though, two new regions have been added to bring the total up to ten, and all the press →

It is...

The onsale date of Edge 2. If you think the magazine is for you – and it's not for everyone – then it would be a wise move to get your ass down to a large newsagents and buy one. Alternatively, and more sensibly, turn to page 113

Big in Japan

Continued

Nintendo is massive: Japan's second most profitable company and steady. Sega is smaller, failing to appear in the top 20, but growing massively – an amazing 64% year on year.

Despite not being even in the top 20 in terms of sales, Nintendo comes out as Japan's second most profitable company in 1992-93, with pretax profits of ¥163.7 billion – roughly equivalent to £1bn, or £1m per employee.

The only company more profitable is the huge Nippon Telegraph and Telephone Corp.

Sega doesn't even make the top 20, which stops at ¥59bn (approx £1/3bn) – although it has shown 64% growth (compared to Nintendo's 4.83%) year on year.

Source: Nikkei Weekly, p21, 12/7/93

Fair weather *SFII* fans



Keen Japanese with a yen for videogames

July was the queue season again in Japan, with the bulk of the heavyweight Super Famicom releases finally being let loose on the eager Japanese public.

Topping the bill was *Street Fighter II Turbo* on July 10, followed by *Super Mario Collection* released on the 14th.

Both games were highly anticipated by Japanese players, but shops were spared the enormous queues simply because of the notoriously wet weather Tokyo experiences at this time of year.

Few braved the overnight camps that usually form outside the game shops the night before, in fear of getting soaked! This was echoed in the queue numbers with the two big SNES releases managing only queues of around 2,000 people at the biggest game shop, Bic Camera in the Akihabara district of Tokyo, compared to the 12,000 that waited for *Dragon Quest V* outside the same shop back in September last year.

Still, things should have returned to 'normal' by now – on August 6 the most eagerly awaited Super Famicom game of the year was released – Square Soft's fabulous-looking simultaneous three-player RPG, *Seiken Densetsu 2* (*Holy Sword Legend 2*).

A game worth getting wet for, apparently.

EA look to CD future

Electronic Arts, the biggest leisure software publisher in the world, is abandoning the floppy disk market.

The firm's president, Mark Lewis, told Edge that within two years he fully expects all his company's product to appear only on compact disc and cartridge.

EA is the first firm to announce such a move, but they already have a reputation for leading where others soon follow.

Mark Lewis, European President of EA said, 'There are some PC 3·5" disk games in progress, but from now on any home computer development will be concentrated on CD.'

As well as a belief that within two years 50% of all PCs will have CD drives, EA's move has also been prompted by more practical considerations. 'The sort of game we're producing on PC now needs 7-10 high density floppy disks – that's an expensive and volatile media. Switching to CD should bring down the cost of goods to us and, ultimately, the cost of PC games to the consumer.'

The drama of the move is highlighted by the fact that EA has yet to launch a single PC CD-ROM game on its own label...

Aladdin



Book a ticket for the first day of the FES and see Disney's Aladdin, for free

← coverage and publicity will be handled by local newspapers – so keep your eyes peeled. The Second Future Entertainment Show is going to be *the* event of 1993. You want to know about the future of videogames? Be there.

But beware...

The FES is ticket only. There won't be any sales on the day, because last year well over 50,000 people flocked to the event, and officials had to close the doors because of the throngs of people attempting to get in.

If you want to attend, you must order your ticket NOW, especially if you want to go on a specific day. The ticket hotline number is: **051 356 5085**.

As an added incentive, **Disney** are giving away 20,000 preview tickets for their new film, Aladdin, to visitors who book for Friday. So, book for Friday and you see Aladdin for nothing (highly recommended – **Edge**). Also, Channel 4's **GamesMaster** programme will be broadcasting live from the show on Thursday.

FES show times

Thursday 11th:	10am-8pm (late opening for GamesMaster Live broadcast session)
Friday 12th:	10am-5pm
Saturday 13th:	9am-5pm
Sunday 14th:	9am-5pm
Tickets:	All one price £6.95; family group (four people with at least one adult) £24.95

Datebook

September

ECTS Autumn: September Sunday 5th-Tuesday 7th, London Business Design Centre, Islington. Tickets free – business visitors only. **(081 742 2828)**.
Live '93: September Thursday 16th-Monday 20th, Olympia, Kensington. **(071 782 6894)**. Open 9.30-9.30 Thurs, Fri; 9.30-7.30, Sat, Sun; 9.30-5.00 Monday. Tickets £7 individual, £16 family. Cheap deals after 4.00pm on first four days.

October

Acorn World '93: Friday 29th-Sunday October 31st, Wembley, London **(0223 254254)**. Open 10.00-6.00 Fri, Sat; 10.00-5.00 Sun. Tickets £5 individual, £3 kids, £15 family – more expensive on the door.

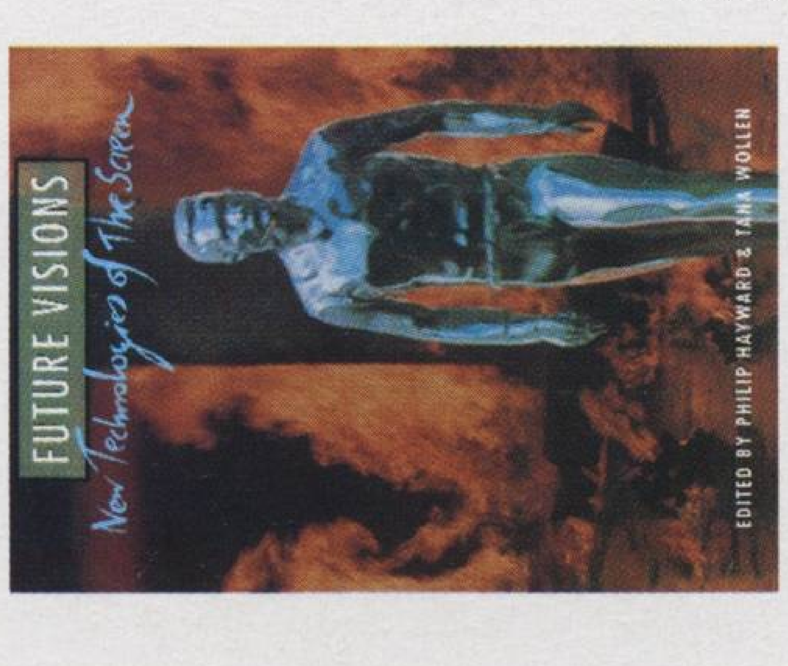
November

Future Entertainment Show: November Thursday 11th-Sunday 14th, Olympia, London **(0225 44224).** The wildest, biggest and best videogame show in the UK. Opening times and ticket details opposite.
Christmas International Computer Show: November Friday 19th-Sunday 21st, Wembley Exhibition Hall, **(0222 512128)**. Open 10.00-6.00, Fri,Sat; 10.00-4.00, Sun. Tickets £6 on the door; £8 by advance booking.
Supergames: November Wednesday 24th-Sunday 28th, Porte de Versailles, Paris **(010 331 4200 3305)**.
VR User Show: Monday 29th November-Thursday 2nd December, London Novotel **(081 994 6477)**. Tickets £7 (free if you pre-register).

December

Computer Shopper Show Christmas '93: Thursday 2nd-Sunday 5th December, Grand Hall, Olympia, London. **(071 373 8141)**. Tickets £7 adults, £5 kids (cheaper when booked in advance). Open 10.00-6.00 Thurs-Sat; 10.00-5.00 Sun.

Show organisers: if your show isn't listed here, it's only because you haven't told **Edge** about it. Do so on 0225 442244, or fax us on 0225 446019, or send details to **Datebook, Edge, 30 Monmouth Street, Bath, Avon BA1 2BW**



Essential reading

Future Visions is a collection of essays on virtual reality, IMAX, new special film effects and interactive games – the latter a useful history but little updated since the late '80s, when it was written for a doctoral thesis (lots of talk of 'narrative' and the 'nature of gamesplaying').

Still, a fascinating book well worth having, if only for the amusement value it will undoubtedly have in a decade's time.

Edge has five copies to give away: just tell us the name of the chap on the book's cover. Write the answer on the back of a sealed envelope – or use the **Edge** postcard which accompanied this issue – and send it it to: **Edge, 30 Monmouth St, Bath BA1 2BW**. Get your entry in by the end of September.

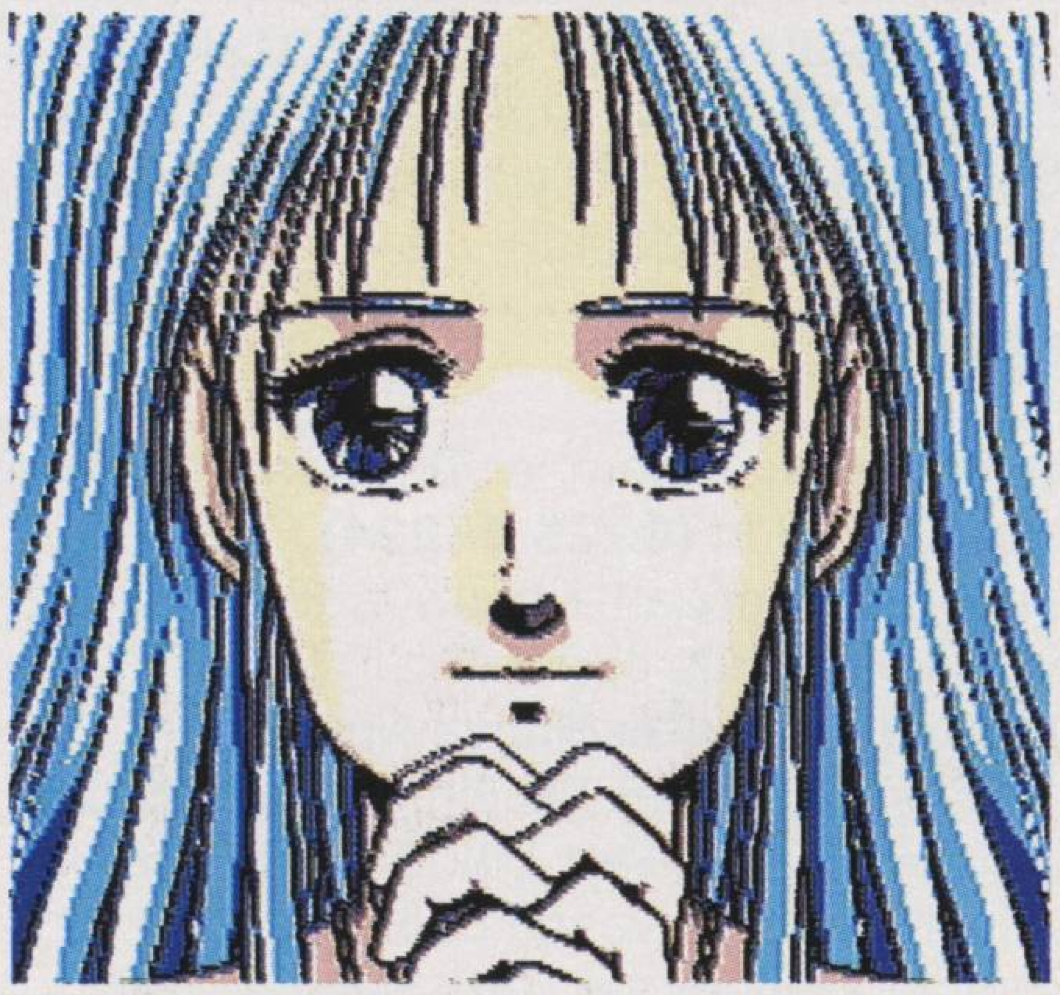
Future Visions: New Technologies Of The Screen, eds **Philip Tard** and **Tana Wollen** (BFI Publishing 1993: ISBN 0-85170-282-1, £13.95 paperback).

Edge rating: **six/10**

Mario And Wario **Galaxy Force II** Maelstrom **Dungeon Master II** Starlord **Solstice II** Beneath A Steel Sky **Thunderhawk** PC Cocoroon **Dracula** Actraiser II **Chuck Rock II** Gunship **Globdule** Goof Troop **Wolfpack** Mortal Kombat **Winter Olympics** Hellfire **Yoshi's Safari** Wonderdog...

Release dates

Edge's unique multiformat release schedule, covering the entire world of videogaming



In Japan, *Ys* has been one of the most popular series of RPGs going. And the fourth installment will soon ready for the Super Famicom on cartridge, with Mega CD and PC Engine CD versions following closer to Christmas. Of course, the English text versions might take a little longer to arrive...



Missing from our *Jurassic Park* prescreen (see page 39) was the Mega Drive version which is being coded in the States. Looking like *Flashback* with dinosaurs, it boasts a 16mbit cartridge and some *very* nicely animated lizards. And, of course, the legendary Mega CD version will be with us later in the year...

E = Early, M = Middle, L = late

Date	Game Title	Type	Publisher	Country
Super NES				
17 September	Final Set	sports	Forum	Japan
27 August	Mario and Wario	puzzle	Nintendo	Japan
22 September	Augusta Masters 2	sports	T & E Soft	Japan
24 September	Arcus Spirits	action	Sammy	Japan
24 September	Darius Force	shooter	Taito	Japan
24 September	Solstice II	adventure	Epic/Sony	Japan
24 September	Super Mario All Stars	platform	Nintendo	UK
L September	NFL Football	sports	Konami	Japan
01 October	Lost Vikings	platform	Nintendo	UK
08 October	Mystic Quest	RPG	Nintendo	UK
08 October	Nigel Mansell's GP	racing	NIntendo	UK
15 October	Vegas Stakes	simulation	Nintendo	UK
15 October	Battletoads	combat	NIntendo	UK
15 October	Suzuka 8 Hours	racing	Namco	Japan
29 October	Actraiser II	action	Enix	Japan
22 October	Goof Troop	action	Capcom	UK
- October	Macross Scr. Valkyrie	shooter	Zamuse	Japan
- October	**Ys IV:**	**RPG**	**Tonkin House**	**Japan**
L October	Rock 'n' Roll Racing	racing	Interplay	UK
L October	Clayfighter	combat	Interplay	UK
09 November	Street Fighter II Turbo	combat	Capcom	UK
19 November	Yoshi's Safari	Super Scope	Nintendo	UK
19 November	Top Racer 2	racing	Kemco	Japan
M November	Might And Magic II	RPG	Elite	UK
- November	Sunset Riders	action	Konami	UK
- November	Zombies	action	Konami	UK
- November	Cool Spot	platform	Virgin	Japan
- November	J-League Cup Soccer	sports	Jaleco	Japan
- November	Pro Baseball '94	sports	Epic/Sony	Japan
02 December	Plok	platform	Nintendo	UK
December	TMNT Tournament	combat	Konami	UK
Mega Drive /M-CD				
- August	Golden Axe III	combat	Sega	UK
- August	Batman Returns (CD)	action	Sega	UK
L August	**Jurassic Park**	**platform**	**Sega**	**Jap/UK**
10 September	Gunstar Heroes	action	Sega	Japan
14 September	Two Tribes	strategy	Virgin	UK
17 September	Gauntlet	action	Tengen	Japan

NOTE: all release dates are subject to change

Releasedates

E = Early, M = Middle, L = late

Mega Drive/M-CD continued

Date	Game Title	Type	Publisher	Country
September	Haunting	action	Electronic Arts	UK
11 September	NHL Hockey '94	sports	Electronic Arts	UK
24 September	Super Baseball 2020	sports	Electronic Arts	UK
24 September	NHL Hockey '94	sports	Electronic Arts	UK
24 September	Vay	RPG	Sims	Japan
- September	Time Dominator	platform	Vic Tokai	Japan
- September	Sonic CD (M-CD)	platform	Sega	Japan
- September	Treasure Land Adv	platform	Sega	Japan
- September	Ultimate Soccer	sports	Sega	UK
- September	Rocket Knight Adv	platform	Konami	UK
- September	Gunstar Heroes	action	Sega	UK
- September	Chuck Rock 2	action	JVC	UK
- September	F1	racing	Domark	UK
- September	Terminator CD (M-CD)	platform	Virgin	UK
- September	Wonderdog	platform	JVC	UK
- September	Chuck Rock 2 (M-CD)	platform	JVC	UK
- September	Heimdall	RPG	Core	UK
- September	Thunderhawk	action	Core	UK
- September	Street Fighter II SCE	combat	Capcom	UK
L September	F1 Circus CD (M-CD)	racing	Nichibutsu	Japan
15 October	James Pond 3	platform	Electronic Arts	UK
29 October	Lethal Enforcers	light gun	Konami	Japan
- October	Columns III	puzzle	Sega	Japan
- October	Arislan (MCD)	RPG	Sega	Japan
- October	Pebble Beach	sports	Sega	Japan
- October	Shining Force II	RPG	Sega	Japan
- October	Dyna Brothers 2	puzzle	CSK	Japan
- November	Battle Mania	action	Vic Tokai	Japan
- November	John Madden '94	sports	Electronic Arts	UK
- November	Mutant L. Hockey	sports	Electronic Arts	UK
- November	Virtual Pinball	simulation	Electronic Arts	UK
- November	EA Soccer	sports	Electronic Arts	UK
- November	Zombies	action	Konami	UK
- November	Lethal Enforcers	light gun	Konami	UK
- November	Lethal Enforcers (CD)	light gun	Konami	UK
- November	Castlevania	platform	Konami	UK
- November	Gunship	shooter	US Gold	UK
- November	Winter Olympics	sports	US Gold	UK

PC Engine/Super CD-ROM² (H = HuCard)

Date	Game Title	Type	Publisher	Country
- August	Championship Rally	racing	Intec	Japan
- September	Magical	-	NEC Avenue	Japan
- October	Power League '93 (H)	sports	Hudson Soft	Japan
- October	PC Cocoroon	action	Wave	Japan
- October	Galaxy D. Gayvan	action	Intec	Japan
26 November	Monster Maker	-	NEC Avenue	Japan
- December	Bomberman '94 (H)	action	Hudson Soft	Japan
- December	Fatal Fury II (18M CD)	combat	Hudson Soft	Japan
- December	Ys IV	RPG	Hudson Soft	Japan
- December	Martial Champions	combat	Konami	Japan
- December	Emerald Dragon	-	NEC Avenue	Japan
- Undecided	Marble Madness (H)	puzzle	Tengen	Japan
- Undecided	Super Darius II	shooter	NEC Avenue	Japan
- Undecided	S. Fantasy Zone	shooter	NEC Avenue	Japan
- Undecided	Strider (CD-ROM²)	platform	NEC Avenue	Japan
- Undecided	Galaxy Force II	shooter	NEC Avenue	Japan
- Undecided	Mega Twins	action	NEC Avenue	Japan
- Undecided	Hellfire (H)	shooter	NEC Avenue	Japan
- Undecided	N. Warriors (CD-ROM²)	action	NEC Avenue	Japan
- Undecided	Gods	action	NEC Avenue	Japan

Neo Geo

Date	Game Title	Type	Publisher	Country
- August	Samurai Showdown	combat	SNK	US/UK
- September	Art Of Fighting 2	combat	SNK	US/UK

PC

Date	Game Title	Type	Publisher	Country
13 September	Lord Of The Rings (CD)	RPG	Interplay	UK
24 September	Privateer	simulation	Electronic Arts	UK
28 September	Lands Of Lore	RPG	Virgin	UK
30 September	Star Trek 25th (CD)	adventure	Interplay	UK
L September	Pirates' Gold	simulation	Microprose	UK
- September	Fantasy Empires	RPG	US Gold	UK
- September	Dark Sun S. Lands	RPG	US Gold	UK
- September	Air Combat Classics	flight sims	Lucas Arts	UK
- September	Wayne Gretsky	sports	Bethesda	UK
- September	Starlord	combat	Microprose	UK
- September	Wolf Pack (CD)	simulation	Novalogic	UK
- September	Shadowcaster	RPG	Origin	UK
- September	Seal Team	simulation	Electronic Arts	UK
- September	NHL '94	sports	Electronic Arts	UK
01 October	Strike Comm. (CD)	flight sim	Origin	UK
12 October	Pacific Strike	simulation	Origin	UK
15 October	Forgotten Castle	RPG	Electronic Arts	UK
19 October	Victory at Sea	simulation	Electronic Arts	UK
22 October	Labyrinth	-	Electronic Arts	UK
- October	Sam and Max	adventure	Lucas Arts	UK
11 November	Dungeon Master II	RPG	Interplay	UK
19 November	Turn And Burn	flight sim	Electronic Arts	UK
- November	Rebel Assault (CD)	action	Lucas Arts	UK
- November	Stonekeep	RPG	Interplay	UK
- November	F14 Fleet Defender	flight sim	Microprose	UK
- November	Subwar 2050	simulation	Microprose	UK
- November	Bloodnet	adventure	Microprose	UK
- November	Dragon's Fear	RPG	Microprose	UK
- November	Mortal Kombat	combat	Virgin	UK
- November	Beneath a Steel Sky	adventure	Virgin	UK
- November	Kyrandia 2	RPG	Virgin	UK

Amiga

Date	Game Title	Type	Publisher	Country
01 September	Blob	puzzle	Core Design	UK
09 September	Alien 3	action	Virgin	UK
21 September	Apocalypse	shooter	Virgin	UK
20 September	Castles II	strategy	Interplay	UK
27 September	Star Trek: 25th	adventure	Interplay	UK
30 September	Lord Of The Rings II	RPG	Interplay	UK
- September	F117a	flight sim	Microprose	UK
- September	Dogfight	flight sim	Microprose	UK
- September	Cannon Fodder	strat/action	Virgin	UK
- September	Burnin' Rubber	racing	Ocean	UK
- September	Micro Machines	racing	Code Masters	UK
- September	Cyber Space	simulation	Ent. Int.	UK
- September	Maelstrom	strategy	Ent. Int	UK
- September	Operation Hellfire	simulation	Psygnosis	UK
E October	Body Blows 2	combat	Team 17	UK
- October	Creepers	platform	Psygnosis	UK
- October	Theatre Of Death	strategy	Psygnosis	UK
- October	Prime Mover	simulation	Psygnosis	UK
- October	Innocent Until Caught	adventure	Psygnosis	UK
- October	Combat Air Patrol	flight sim	Psygnosis	UK
- October	Alien Breed 2 (A1200)	action	Team 17	UK
- October	Dracula	action	Psygnosis	UK
- November	Orbitus 2	RPG	Psygnosis	UK
- November	Globdule	platform	Psygnosis	UK
- November	Second Samurai	action	Ent. Int	UK

Magazines

Date	Game Title	Type	Publisher	Country
30 September	**Edge** 1	multiformat	Future	UK
28 October	**Edge** 2	multiformat	Future	UK
25 November	**Edge** 3	multiformat	Future	UK
23 December	**Edge** 4	multiformat	Future	UK

NOTE: all release dates are subject to change

Jungle Strike Mega Drive **Night Trap** Mega CD **Starwing** Super Nintendo **Syndicate** PC **Day Of The Tentacle** PC CD-ROM **Syndicate** PC **Puyo Puyo** Mega Drive (Japan) **Street Fighter II Turbo** Super Famicom (Japan) **Micro Machines** Mega Drive **Final Fight** Mega CD...

Charts

The very latest **charts** from across the entire world of videogaming

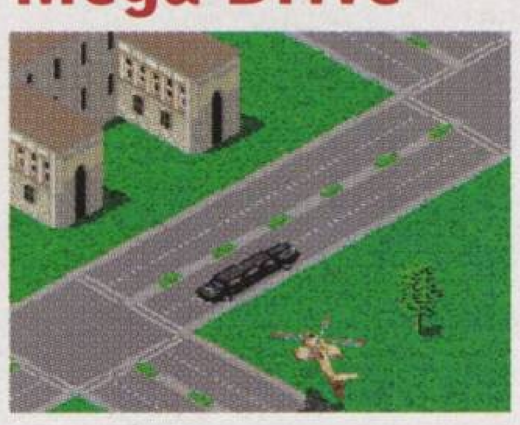
SFC (Japan)

1. **Street Fighter Turbo** Capcom (¥9,980)
2. **Super Mario Collection** – Nintendo (¥9,800)
3. **Pro Wrestling** – NCS (¥9,800)
4. **Madara 2** – Konami (¥9,800)
5. **SuperScope 6** – Nintendo (¥9,800)
6. **Yoshi's Cookie** - Bulletproof Software (¥6,600)
7. **Super Mario Kart** – Nintendo (¥8,900)
8. **Super Air Diver** – Asmik (¥8,900)
9. **Super Formation Soccer II** – Human (¥8,500)
10. **Yoshi's Safari** – Nintendo (¥6,500)

Mega Drive

1. **Jungle Strike** Electronic Arts (£45)
2. **Micro Machines** Code Masters (£35)
3. **Cool Spot** Virgin (£45)
4. **Flashback** US Gold (£45)
5. **PGA Tour Golf 2** Electronic Arts (£40)
6. **Ecco The Dolphin** Sega (£40)
7. **Tiny Toons: Buster's Treasure** Konami (£40)
8. **Super Kick Off** US Gold (£45)
9. **Sonic The Hedgehog 2** Sega (£40)
10. **Fatal Fury** Sega (£45)

Mega Drive



***Jungle Strike*: EA does sequel shuffle again**

Once EA finds a winning formula it never lets go does it? But who can blame them when Sega players keep picking up the sequels?

The well impressive *Jungle Strike* hogs the number one slot (until NHL '94 slides in for the tackle) and PGA 2 is still at number 5.

Looks like MD fans are wising up: there's precious little trash in the top ten these days – if only the same could be said about the Mega CD chart...

Amiga

Fullprice games (and they are *very* full price) dominate the top slot.

However, the 'significantly cheaper but still not budget' Team 17 continue to place highly, with their very polished and dead playable titles.



Utterly predictable, utterly brill: *Syndicate*

Amiga

1. **Syndicate** – Electronic Arts (£35)
2. **Goal!** – Virgin (£31)
3. **Gunship 2000** – Microprose (£35)
4. **Project X** – Team 17 (£13)
5. **Championship Manager 93** - Domark (£26)
6. **World Class Cricket** – Audiogenic (£30)
7. **Flashback** – US Gold (£31)
8. **Alien Breed: Special Edition 92** - Team 17 (£11)
9. **Dune 2** – Virgin (£31)
10. **Sensible Soccer 92/93** - Renegade/Mindscape (£26)

MD (Japan)

1. **Puyo Puyo** Sega (¥4,800)
2. **Night Striker** Taito (¥7,800)
3. **Ex Ranza** Gau (¥6,800)
4. **Illusion City** Cabin (¥4,980)
5. **Fatal Fury** Sega (¥8,800)
6. **Switch** Sega (¥8,800)
7. **Devastator** Taito (¥7,800)
8. **Sega Classics** Sega (CD) (¥2,980)
9. **J-League** Sega (¥7,800)
10. **Golden Axe III** Sega (¥6,800)

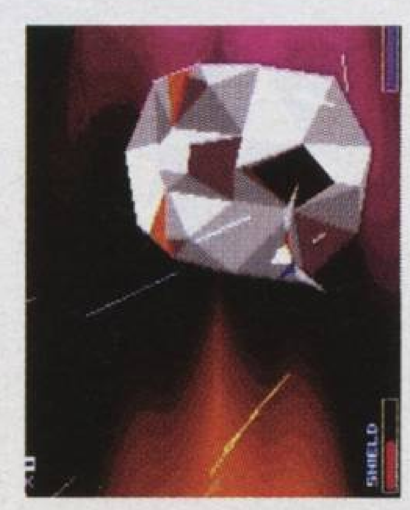
PC

1. **Syndicate –** Electronic Arts (£45)
2. **X-Wing: Imperial Pursuit –** US Gold (£20)
3. **Sensible Soccer 92/93 –** Renegade/Mindscape (£33)
4. **Populous & Promised Lands** – Hit Squad (£14)
5. **Fields Of Glory –** Microprose (£45)
6. **X-Wing –** US Gold (£46)
7. **Day Of The Tentacle –** US Gold (£43)
8. **Flashback –** US Gold (£38)
9. **Terminator 2 –** Hit Squad (£10)
10. **The Simpsons –** Hit Squad (£10)

SNES

1. **Starwing –** Nintendo (£50)
2. **Alien 3 –** LJN (£50)
3. **Super Star Wars –** JVC (£50)
4. **Super Mario Kart –** Nintendo (£40)
5. **Tiny Toons: Buster Busts Loose –** Konami (£50)
6. **WWF Royal Rumble –** LJN (£60)
7. **Cybernator –** Konami (£50)
8. **PGA Tour Golf –** EA (£45)
9. **Desert Strike –** EA (£45)
10. **Pebble Beach Golf –** T&E (£50)

SNES
No surprises here, and deservedly so: they're all good titles, and show the SNES off to the full.
Rumour has it that *Starwing* has bombed in the US and Japan: overhype perhaps?



***Starwing* – still the fave of UK gamers**

Mega CD

1. **Night Trap –** Digital Pictures (£50)
2. **Final Fight –** Capcom (£45)
3. **Road Avenger –** Renovation (£40)
4. **Robo Aleste –** Compile (£40)
5. **Sherlock Holmes –** Sega (£45)
6. **Time Gal –** Wolfteam (£40)
7. **Jaguar XJ220 –** Core Design (£45)
8. **After Burner 3 –** Sega (£40)
9. **Prince of Persia –** JVC (£45)
10. **Black hole Assault –** Sega (£40)

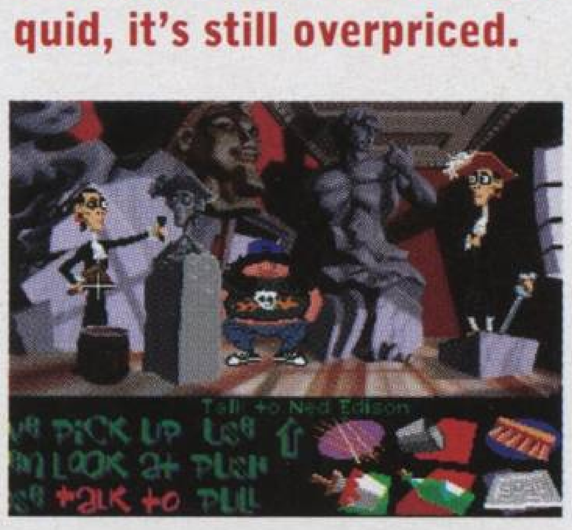
PC CD-ROM

1. **Day Of The Tentacle** US Gold (£46)
2. **The 7th Guest** Virgin (£70)
3. **The Fate Of Atlantis** US Gold (£46)
4. **Ringworld** Accolade (£40)
5. **Eric The Unready** Accolade (£35)
6. **King's Quest V** Sierra On-Line (£50)
7. **Laura Bow 2** Sierra On-Line (£45)
8. **Loom** US Gold (£46)
9. **Sherlock Holmes 3** Mindscape (£50)
10. **Monkey Island** US Gold (£46)

PC
***Day Of The Tentacle* reigns supreme at the top of the CD-ROM charts, and also maintains a healthy position at number 7 amongst the floppies.**

CD titles do seem to follow an unsettling trend: apparently you can't do much else on silver disk but adventures and murder mysteries...

On floppy, it's sad to see *Terminator 2* rearing it's ugly little head. At ten quid, it's still overpriced.



***Day Of The Tentacle* – sheer CD-ROM class**

Edge charts

Each month Edge will be presenting its own brand of charts, either compiled by the magazine or by you – the reader.

Top five intro sequences

Some of the more impressive attract modes from Edge 1:
1. **Microcosm – Without doubt one of the longest intros on any game ever.**
2. **Silpheed – So good, it should be shown at the local cinema. Battlestar Galactica in miniature.**
3. **Lands Of Lore – Glorious use of colours and great storyline.**
4. **Inca – CD-i's best game to date has a great intro, full of digitised pics and moody Peruvian music.**
5. **Jaggernath – Great robotic battle of the future, great animation, booming soundtrack.**

Edge classic five

The following is a list of classic titles that have been emulated but never bettered. So, in no particular order...

1. **R-Type – coin-op**
2. **Paradroid – C64**
3. **Street Fighter Turbo – Super Nintendo**
4. **Super Mario 3 – NES**
5. **The Sentinel – Amiga**

What? You disagree? Well in that case, send in your own personal fave five to: Classics, Edge, 30 Monmouth Street, Bath, Avon BA1 2BW

Edge readers' most-wanted

And this is where you come in: we want you to send in a list of the five games you're most looking forward to seeing, regardless of format. Send your list to: Incoming, Edge, 30 Monmouth Street, Bath, Avon, BA1 2BW.

Dungeon Master II Forgotten Castle **Stonekeep** Top Gear 2 **Impossible Mission** Starlord **F-14 Fleet Defender** Thunderhawk **Inferno** TFX **Jurassic Park** Landstalker **Rise Of The Robots**...

Prescreen

Prescreen is the section where **Edge** looks at the very best games in development across all gaming formats. The section is based on exhaustive interviews with programmers, videogaming experts, and, of course, **Edge**'s many sources in the industry.

One thing you can be sure of – if it's here, then it's a game that's going to make waves in the very near future.

So don't expect to find all the dross that gets previewed in other magazines – this is **Edge**'s intelligence section: These are the latest, the best, and the most exciting games that you could find yourself playing over the next year. And it's not just screenshots and hot air – this section is based on face to face contacts and genuine insider knowledge.

In this galaxy of prescreens, the brightest stars are *Forgotten Castle* on PC, *Thunderhawk* on Mega CD and *Top Gear 2* on SNES – every one a 3D experience; a definite clue to the future of videogames. E

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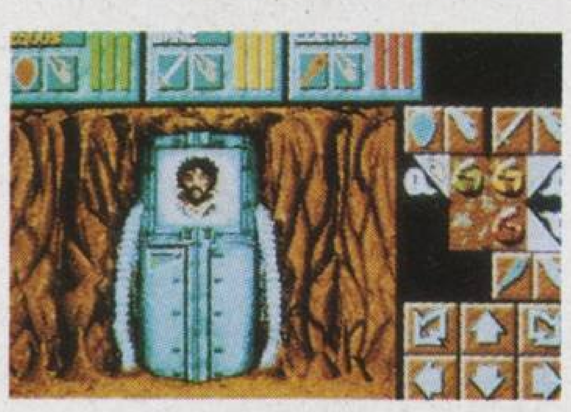


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Dungeon Master II: The Legend Of Skullkeep

















A selection of screens from *Dungeon Master II* on the PC and Amiga. Characters for selection have been cocooned in the Cryovault (PC shot second from top)

Format: **PC/Amiga/M-CD**
Publisher: **Interplay (PC)**
Publisher: **Unknown (Am)**
Publisher: **JVC (M-CD)**
Developer: **FTL**
Release: **Nov/TBA/TBA**
Size: **3 Disks/TBA/1 CD**
Origin: **US (all)**

The original *Dungeon Master* caused rioting in the streets when it appeared on the ST in early '88 and probably had more influence on the sales of STs than Atari ever did.

It sold huge numbers, out-foxed the pirates and single-handedly revolutionised the roleplaying game genre. Sure, it's old hat today, but it was way ahead of its time.

Nobody expected that a sequel would take years to arrive. Four years, to be precise. *Dungeon Master II* is mostly the fruit of the last two year's work, and it's good to see that the original game's designers have created *DM II*, and not farmed the work off to hopeless YTS under-achievers. But has it been worth the wait? And will RPG fans' social skills plummet to new depths as they get hooked on the next wave of *Dungeon Master*?

Well, it's highly likely. What, at first, looks like a rehash of the original game, with the same step-block screen update and a similar interface, actually hides an immensely complex piece of programming. What separates *Dungeon Master II* from the graphically state-of-the-art computer RPGs (like *Forgotten Castle*, see over) is the level of complexity in the gameplay environments.

As a trade-off from the rather dated scrolling, there's a very intelligent universe out there. The monsters in the original just honed in on you, but these open doors, push buttons, pull levers, and think and learn for themselves. Hit a certain type of monster and they'll run away, heal their wounds, then get their friends to gang up on you. They'll even pick up the objects you hurl at them, and throw them back at you. In fact the artificial intelligence is so advanced that FTL are having to downgrade it to make it fairer. After all, having half the creatures from an entire level hunting you down just isn't much fun.

But as you might have guessed, in *DM II* graphics take a relative back seat to gameplay (although the newer 256 colour PC graphics are better than the 32 colour versions here). This is why you'll be seeing the game on the Amiga and Sega CD as well as the PC.

For a detailed look at the game check out the next **Edge**. ∎

It's taken four years to arrive. And it's got such intelligent monsters that even the developers are running scared. It's *DM II* – the big RPG sequel





He may look stupid (left) but *DM II*'s enemies are really smart. Here's where items are bought and sold (below, Mega CD shot)



The PC's VGA graphics are still in preliminary form. What you can't see here are the lovely new 256-colour dungeons (Edge, next month)

Forgotten Castle

Edge reckons Twin Dolphin's *Forgotten Castle* could take the RPG action adventure into a new realm. Join the quest











From the top: An utterly amazing stone wall that comes to life in front of you; a snail; an almost human-type thing; an insect; and lastly, some axe-wielding monsters. Each one has exactly 120 frames of animation



The depth-cued graphics are really outstanding. The interface with its weapons, keys etc, can be hidden



If you can imagine this detailed cityscape scaling and rotating smoothly around you, you're about one tenth of the way to grasping the graphic flair on display. Twin Dolphin are working wonders on the PC

Format: **PC**
Publisher: **Electronic Arts**
Developer: **Twin Dolphin**
Release date: **10/93**
Size: **9 disks**
Origin: **US**

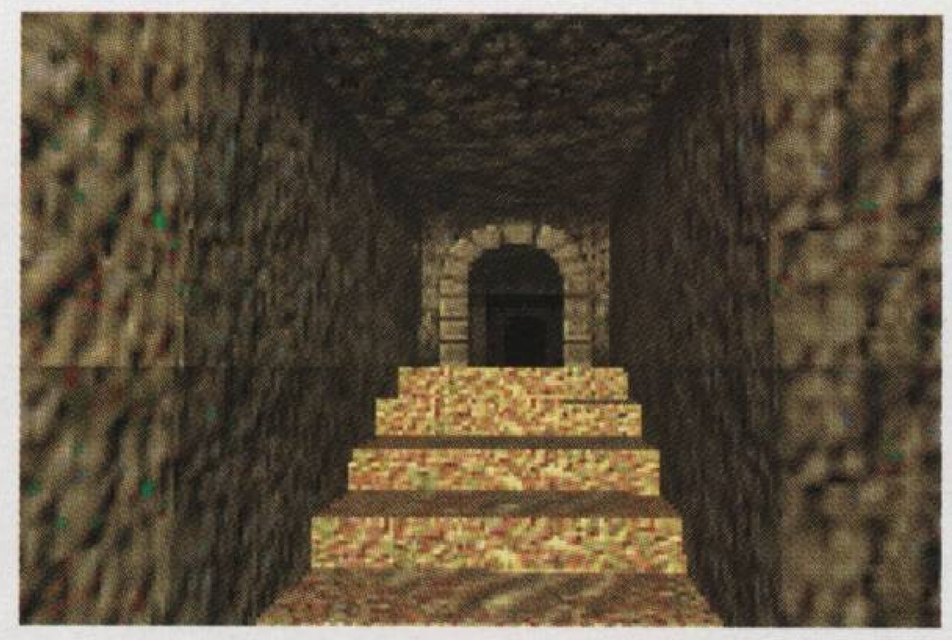
Now this really is impressive. It wowed the more discerning onlookers at the Chicago CES in June, and even made the best 3DO games look like Atari ST stuff. *Forgotten Castle* is a PC showcase of spectacular quality. The Ferrari of fantasy roleplaying games.

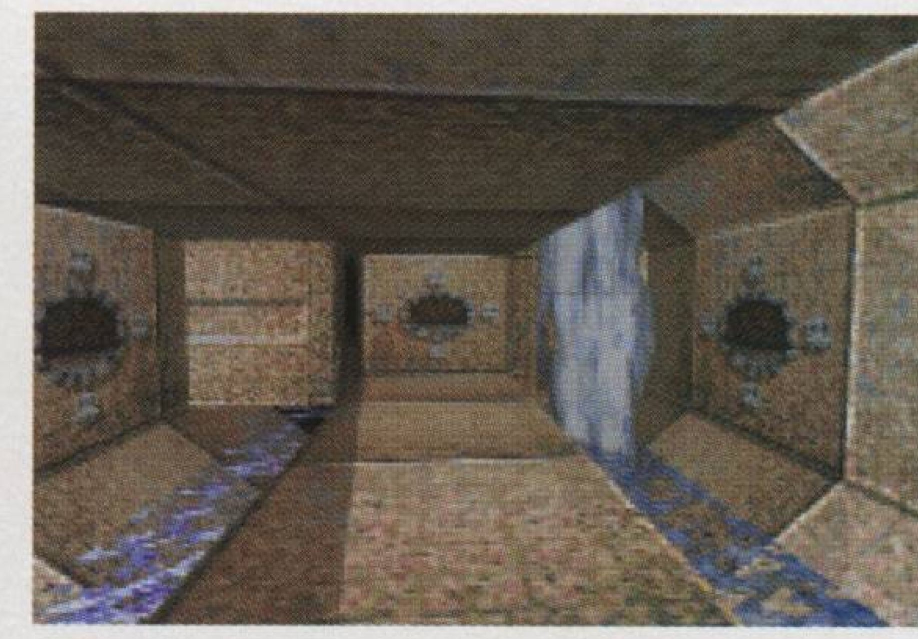
True, there's certainly no shortage of quality first-person perspective RPGs like *Dungeon Master*, *Eye Of The Beholder* and this month's *Lands Of Lore*, but the race is on to see who can produce the best-looking, and most user-friendly adventure yet.

And this game has already qualified on the first count. For its use of 256 colours, beautiful depth-cueing and, for the first time in this kind of game engine, its amazing 3D views. You can



The dungeons are equally well presented with detailed graphics and unrivalled angles of perspective. Skeletons wait for you in there, too





There's a huge playing area to discover with an enormous range of environments (above). Check out the falling water that flows into the gutter (above right). It's lovely

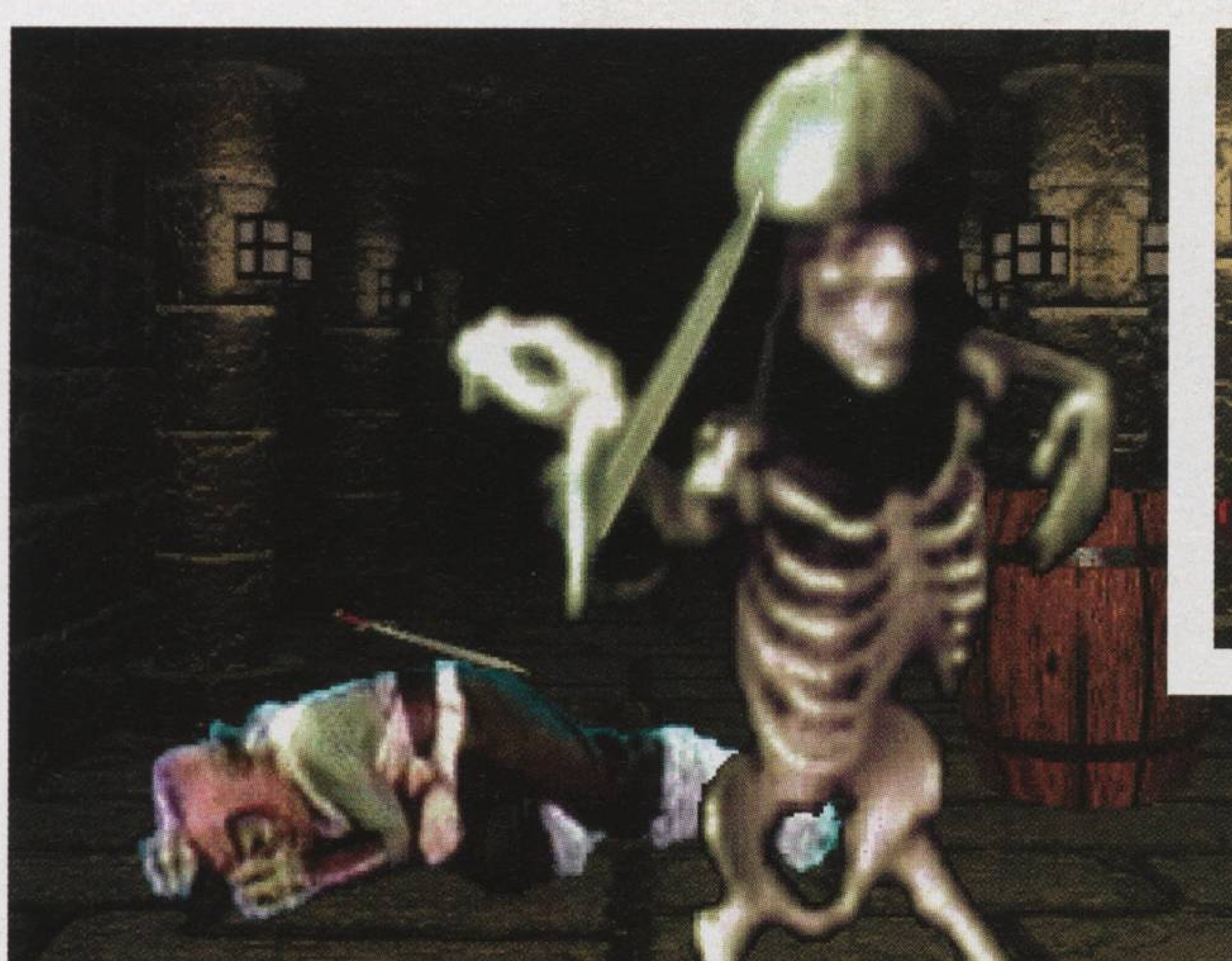
walk through the village and then turn and look in one of the windows for a realistic 3D interior. There's complete freedom of movement, unlike *The 7th Guest*. And the scaling graphics leave you breathless.

So what's it all about then? The story unfolds like this. You're a prince on an epic quest searching for your father, the last true king of the land of Alonia. Evil rules where justice once prevailed etc, etc, and you have to travel to the city of Hedburg to defeat the monsters and 'foul Ruzakian hordes' that have taken over the town.

There is a wealth of different environments including streets, caverns, crypts, and creepy dungeons. Everything takes place in real time, too, and there's an 'invisible' interface to help out, without bogging down the screen in icons. You click on the mouse and something dies, basically.

Okay, there's lots more to it than that but the feel of the whole thing is action-orientated. It's designed to appeal to a wide range of players, and as such, might not meet the grey matter-testing requirements of diehard *Dungeon Master* and *Ultima Underworld* fans. E

It made the best 3DO games look like Atari ST stuff...





Stonekeep has been created using a mixture of 3D rendering and bluescreen cinematic techniques. People had to dress up and strap bones to their bodies, before being filmed against bluescreen

Stonekeep

Stonekeep – is this going to be the best action RPG ever? **Edge** explores

Format: **PC**
Publisher: **Interplay**
Developer: **In-house**
Release date: **11/93**
Size: **9 disks**
Origin: **US**

And here's another great-looking dungeon game. 3D rendered graphics have been combined with digitised actors from bluescreen cinematography to create what looks like one of the best action RPGs yet. Check out the skeletons straight out of Jason And The Argonauts, and the action-based interface with your sword slashes as visible as the character in front of you.

Even the inventories and other interfaces are kept out of view until needed. As a PC-only product this obviously has the potential, like *Forgotten Castle*, to be very lavish visually. As usual though, it remains to be seen if the gameplay will be similarly well crafted. E



What about this dragon? A great example of what can be done in eyepopping 256 colours

Top Gear 2

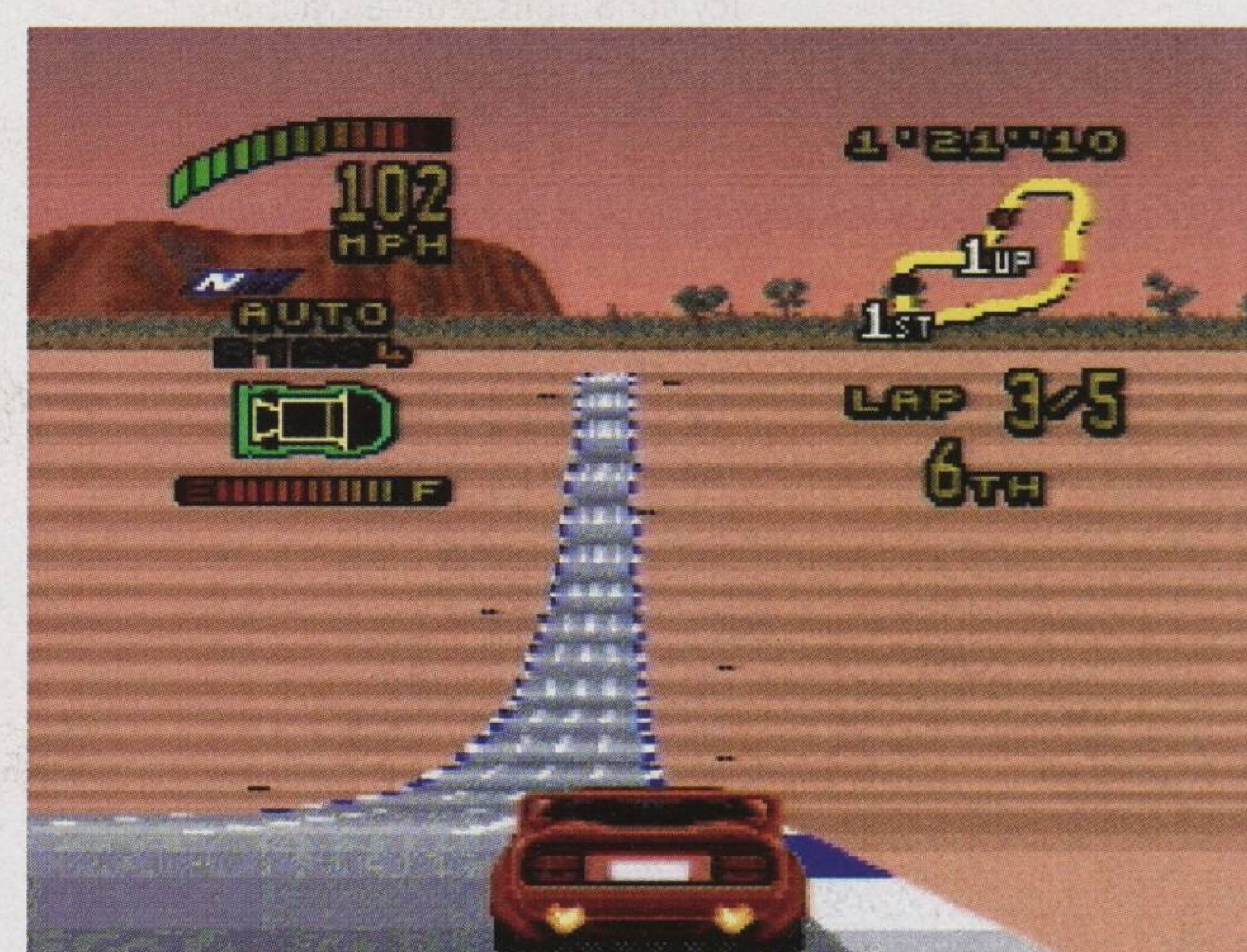
Top Gear 2 will be more than just another sequel. It looks like it could become *the* essential racing game for the SNES. **Edge** tracks it down

Format: **SNES**
Publisher: **Kemco**
Developer: **Gremlin**
Release date: **01/11/93**
Size: **8-meg cart**
Origin: **UK**

Fans of the original *Top Gear* – known as *Top Racer* in Japan – will be delighted to hear that there's a sequel on the way. Using an eight meg cart as opposed to the four of the original, the sequel boasts smoother, more detailed graphics and improved gameplay.

In *Top Gear 2* you travel through 16 countries, split into 64 cities, treacherous weather conditions, rain, fog, and snow. You have the choice of any car, any car you like – as long as it's the red one. The cars differ internally, with only a choice of manual or automatic transmission to begin with, but as you progress and earn lots of money, you buy different engines. Your car kicks off with a weedy V6 engine, but if you save up your money you can soon be the proud owner of a V12 monster – capable of speeds over 200mph.

The screen layout is similar to its predecessor, showing your speed, a map, and nitros. Incidentally this time your car comes equipped with five nitros instead of three; but the actual



Two laps left, and currently in sixth place. *Top Gear 2* should be retitled 'Roller Coaster': It's chock full of really stomach-churning descents





The road moves a lot faster and is smoother, thanks to improved programming techniques and a memory upgrade. Now solo players have the luxury of a whole screen to themselves



Let Her Rip!!, I think they mean swiftly depress the accelerator and utilise the immense horsepower situated under the bonnet



Using a wider road than its predecessor and improved graphics, ***Top Gear 2*** **could be *the* race game for the SNES. Use the rear lights of the other cars travelling through the night and fog stages, and make sure your car's tyres have been changed to wets before attempting the rain section**

play area is larger, the road is wider, with larger sprites, allowing you to see more of the action. The pitstops have been taken out because they were thought to have slowed down the original. Instead you have to collect fuel without stopping as you hurtle down the track – no easy task.

There are points in the game where you're driving blind up a hill and all of a sudden your car reaches the top and begins its stomach-churning decent. The undulating hills are very realistic and improve on the original no end. The various weather conditions affect the way the car performs – rain and icy conditions reduce traction, obviously making driving at 200mph a slightly risky occupation.

Swerving through the fog, the other cars' rear lights are your only guide

Swerving through the night or fog is also very difficult: the other cars' rear lights are your only guide to stay on the road, as your vision is so badly impaired. The cars update smoothly and convincingly – no juddering sprites in this game – and the overall package is highly polished.



Here's your options screens – you even get to choose your engine (below)

Two players can play simultaneously with the aid of the split screen, but the major difference centres around the oneplayer mode. *Top Gear* used the same split screen layout in oneplayer mode, but in the sequel you get a single screen. This gives the game much more of an arcade feel.

Top Gear 2 basically uses the same animation routine as the original version, but the largest part of the cart's memory is used to hold tables 'above' the game code. By doing this, instead of continually accessing the source code, the game can lift data straight from the table, thus speeding up the majority of calculations.

Kemco have also used better compression routines and, according to one leading *Top Gear 2* programmer, they also discovered extra RAM that they didn't know existed, which has allowed for better use of playfields.

Without doubt, the graphics have been improved, but they were never the game's selling point. What is important is the playability, and the version we played seemed fine, if a little sluggish.

Due for release in November, *Top Gear 2* is a sequel that has been well worth the wait.

Credits

Programmer: Ritchie Brannan
Programmer: Ashley Bennett
Main artist: Mick Hirst
Horizons: Berni
Artwork: Paul Gregory
Artwork: Syd Franklyn
Artwork: Paul Green
Music/SFX: Paul Hiley
Music: Patrick Phelan
Programming: Matthew Donkin
Track design: Tony Dawson
Producer: Mark Glossop

Impossible mission: the 90s remix

Microprose plans to launch new 'quality' console games. So why did they remix the old *Impossible Mission?* **Edge** investigates



What does *Impossible Mission the remix* have in store for us? Looking at these shots the graphics have obviously been tidied up – and the animation's even *better*

Format: **SNES/Mega Drive**
Publisher: **Microprose**
Developer: **In-house**
Release date: **11/93**
Size: **8 Mbit cart**
Origin: **UK**

Impossible Mission first appeared on the Commodore 64 in 1984. Microprose now plans to release '*The 90s Remix*' for Mega Drive and Super NES.

There are three characters – compared to just one in the original – and each has its own attributes. The game is spread across 18 multi-parallax scrolling levels, and your objective is to collect pieces of circuitboard to get onto the next level. There is a variety of sub-games within the computer terminals, ranging from simple *Galaxian*-type shooters to a new version of the old fave, *Simon*.

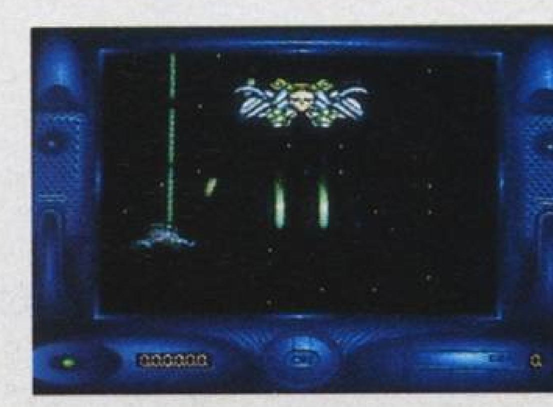
You get power-ups that give your character the ability to morph into vehicles, and Microprose has also added end of level bosses. But that's it. The rest is all very, very close to the original. The programmers have even included an option where you can play the full original version – the eight-bit *Impossible Mission* has been converted pixel for pixel: all the graphics, animation, speech: every detail has been recreated perfectly.

Impossible Mission: The 90s Remix looks rather nice, if a bit unsurprising. But presuming it's at least as playable as the old version, Microprose could well have a hit on their hands.

Microprose is a company known for its simulations for PC and Amiga – *Impossible Mission* marks the start of its new interest in consoles. **Paul Hibbard**, publishing director, explains: 'We never got into consoles on eight-bit, as our games just wouldn't work on them. (Too right: NES *F-15* was dire – **Edge**). Now we're going for quality console products, rather than just throwing out platform games.'

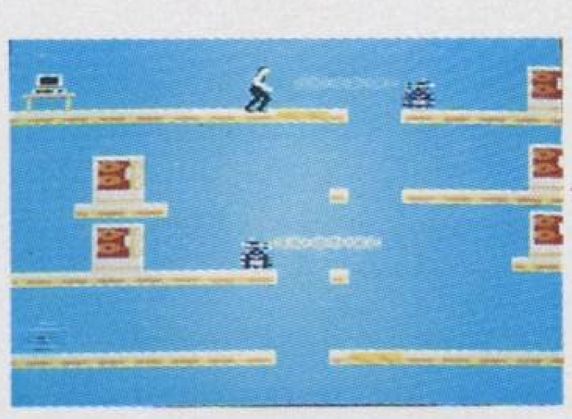
'Gameplayers want a new experience – you can always bring out the same old platform game. We're trying to give a new experience to the gamer with *all* the products we do.'

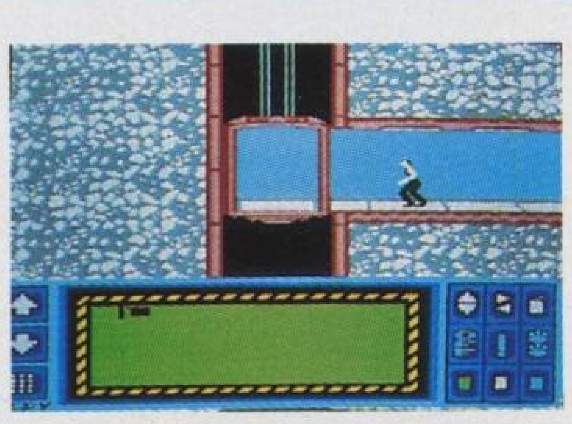
Impossible Mission: The 90s Remix – new experience or just sad old console game? You decide.





Hidden sub-games (top) lurk in the action. just do this puzzle to access the next level (bottom)



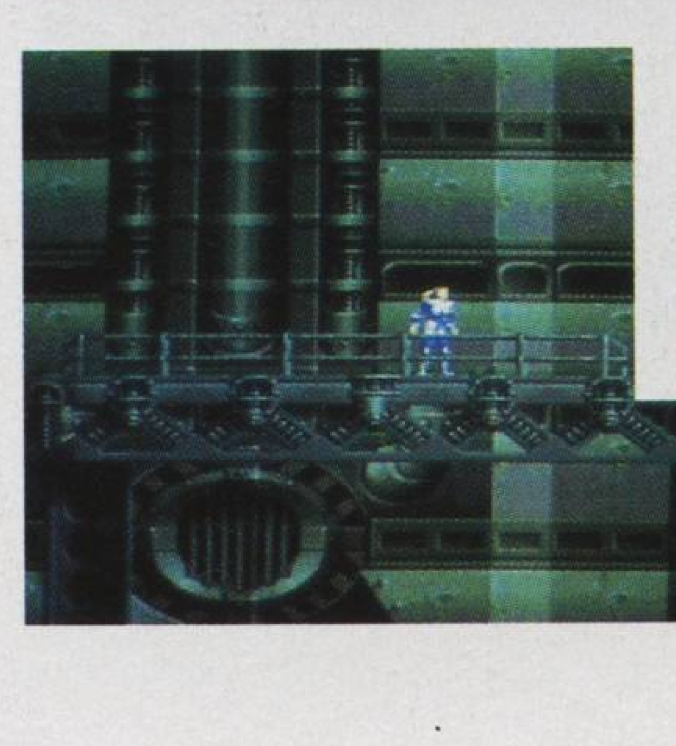


Remember this? The programmers have included the original C64 classic. As you can see it's identical – right down to the horrible colour scheme



(Left) Here's Felix Fly, the streetwise robot hunter, Ram, the renegade robot, and Tasha, super athlete – all the characters from *Impossible Mission*





Each level is set in a different scene, such as the city (above), and the sewers (left)

Starlord &
F-14 Fleet Defender











The graphics in *F-14 Fleet Defender* are incredible – even the ingame cockpit view (below right) isn't your run-of-the-mill flight sim control panel. And the scene-setting shots (centre, above right, below left) are brilliantly vivid. Incidentally, the game contains 1,000 miles of 'real' coastline

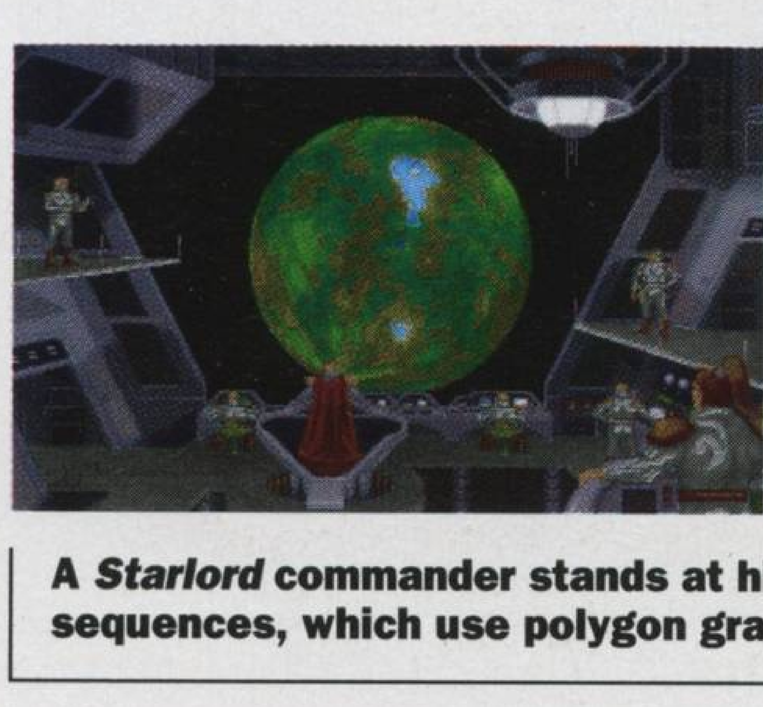
There's also the standard Microprose PC offerings – *F-14 and Starlord.* **Edge** takes to the skies

Format: **PC/Amiga**
Publisher: **Microprose**
Developer: **In-house**
Release date: **11/93**
Size: **TBA**
Origin: **UK**

Described as '*Elite* with knobs on', *Starlord* is a 3D strategy game, where your goal is to build up an empire and gain 'Starlord' status. There are hundreds of planets, and various paths to connect them all – whether you can travel these paths depends on your status – and the object of the game is to take over the stars. Gameplay is broken up by some impressive 3D polygon starfighting scenes, but the strategic element is simplistic and generally dull.

F-14 Fleet Defender is a sequel to the popular *F-15 Strike Eagle*, and was written by the same team that coded *Strike Eagle*. *F-14* takes place at sea, since the F-14 is a carrier-based jet. Missions range from reconnaissance to air-to-air combat and interception. The level of detail on the ground is high – you get more than 1,000 miles of actual coastline to fly over, all based on maps, and carefully shaded.

It may be *another* flight sim, but it doesn't look half bad.





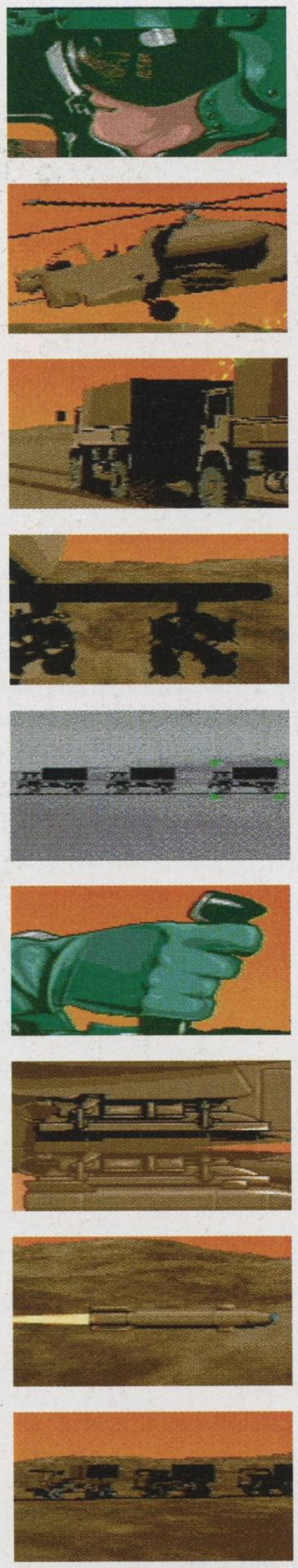




A *Starlord* commander stands at his bridge as a planet looms into view (far left). The other three scenes show off the game's 3D combat sequences, which use polygon graphics. However, it's doubtful that gameplay will match up to these spectacular graphics in the finished game

Thunder hawk

It may look like just another chopper-based shoot 'em up, but it's also the game that many say could rescue the reputation of the Mega CD. **Edge** meets the saviour



Format: **Sega Mega CD**
Publisher: **Core Design**
Developer: **Core Design**
Release date: **01/09/93**
Size: **1 CD**
Origin: **UK**

Thunderhawk is being touted as the Mega CD's saviour. It comes at a time when CD games are becoming all rather predictable. While you get wonderful, fully-digitised video images with thumping rock soundtracks, playability is generally non-existent.

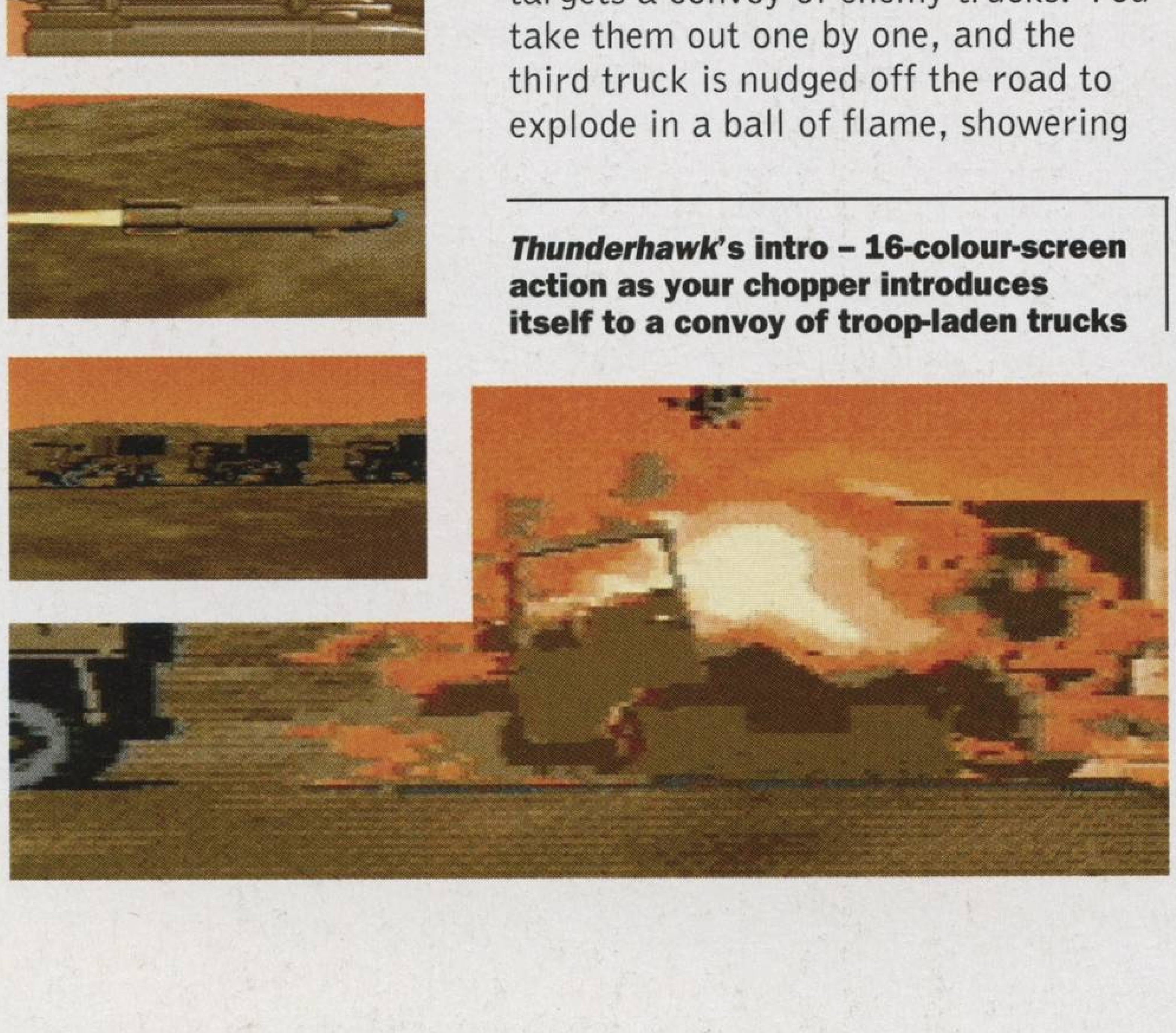
Thunderhawk was originally an Amiga game using 3D polygon graphics: the Mega CD version is more sprite-based and looks nothing like its Commodore counterpart. For a start, it's got 45mins of CD space – a colossal 405 megabytes in total. With *Thunderhawk*, **Core** have definitely tried something different: they have created a CD game that looks and sounds good, and – at last – actually plays rather well too.

Starting with the presentation – often the only part worth talking about where Mega CD games are concerned – and you get a great intro: your helicopter begins by zooming over undulating fractal-style hills, until it targets a convoy of enemy trucks. You take them out one by one, and the third truck is nudged off the road to explode in a ball of flame, showering debris all over the screen. A great military-type soundtrack accompanies the intro action, all just begging to be listened to in stereo. So, another great CD intro, what about the game?

Starting off with a world map, you choose your required mission. There's a neat briefing sequence, then it's off into battle you go.

The ingame graphics look great, and, unlike some CD helicopter games, you are in total control over where your chopper goes and what it does.

The graphics are fast, fluid and very convincing. *Thunderhawk* is the first game on Mega CD to use the Sega equivalent of Mode 7 – relying on a dedicated graphics chip specially designed to control 3D scrolling. The



***Thunderhawk*'s intro – 16-colour-screen action as your chopper introduces itself to a convoy of troop-laden trucks**



Primary target locked! But try avoiding that large rock formation first



One stationary house versus one heavily-armed chopper with target-seeking missiles. Well... the house was asking for it



Ground detail is also handled by the 3D chip. Impressive stuff



The polar ice pack – maybe you should have turned *left* at Milton Keynes...



As your cannon fire splashes harmlessly in the water, the enemy vessel sneaks away to hide offscreen. Tricky blighter, Johnny warship

More than **Mode 7**?

Most of you will have heard of Mode 7, the graphic technique used in SNES games like *Pilotwings* and *F-Zero*.

Well, there were rumours that the Mega CD had some clever tricks up its sleeve, and *Thunderhawk* is the first title to demonstrate it.

The effect is just like Mode 7 – using clever maths to distort and rotate a scrolling 2D bitmap. However, the SNES utilises a single videochip, and is quite slow – that's why most Mode 7 games require an extra DSP chip to speed things up. Because the Mega CD uses twin processors, the graphics take no time to draw – it's way faster and also enables texture-mapping.

Sega's chip also allows scrolling in two axes, rather than just one as with the SNES, enabling your chopper to bank and yaw. Sega, for once, seem to have one over on Nintendo.

only drawback is the lack of colour – the scenery is made up of just 16 colours, so it can look a bit drab.

So it's graphically good, but what about the gameplay? *Thunderhawk*'s easy to get to grips with. You first carefully target the enemy using your radar, then select your armament: you have a choice of cannons, rockets and missiles. Missiles are set for auto lock-on, but the cannon and rockets have to be aimed manually. Then you just shoot the hell out of whatever you are targeting. When all the enemies have been destroyed, you head out of the combat area. And that's it.

The action is backed up by impressive music, but it's on CD so that's what you'd expect. Fully digitised speech warns you of incoming enemy missiles and tells you to '*get the hell out of there*' when the going gets tough. Although scratchy and in some places a bit unclear, the speech adds urgency and atmosphere to the game.

One worrying point – we completed five operations (out of a total of ten) in an hour. It was a preview copy so changes are still to be made; the final version may be gut-wrenchingly difficult to complete, but the preview version was a bit of a pushover.



Direct hit – engine systems down... looks like you're skiing home

The game was in design for seven months and is only now nearing completion. **Edge** asked *Thunderhawk* programmer **Mark Avory** why it has taken so long for anything decent to come out on Sega's Mega CD system.

Mark 'To begin with, the Japanese were pushing to get CD games out onto the streets whatever the cost, that's why a lot of games were just glorified demos. Now the Mega CD is in this country we can take our time developing software for it. *Thunderhawk* doesn't even use all of its capabilities – for example, we only have 16 colours onscreen. Our next project will certainly use 64 colours, and will be much, much faster.'

Thunderhawk is a new breed of Mega CD game – it's flashy and playable. And Core are setting a standard that others will now have to follow. It's not a perfect game – far from it – but it's definitely a step in the right direction.



Oh dear. It would appear that your bullet-avoiding skills are a little lacking. Radar, map and cigarette lighter are all out of commission

Credits

Programmer: Mark Avory
Graphic artist: Jason Gee
Producer: Jeremy Smith
Project coordinator: Adrian Smith
Music: Martin Iveson
Music: Anthony Wheeldon
Assistant Designer: Troy Horton



Sprites are also rotated to match the angle of the horizon. Clever, eh?

T.F.X. & Inferno

TFX and *Inferno* are the latest 3D games from the partnership of **Ocean** and **Digital Image Design**. And, after last year's overhyped *Epic*, both companies have a lot to prove. **Edge** goes on reconnaisance













***Inferno*'s hall of fame: starting with (top) your commander, moving on to bad guys in varying stages of putrefaction – the more wrinkled and old they are, the more senior. The ugliest is emperor – no prizes for guessing which one he is**



A retinal scan is used to confirm that you're who you say you are. The red lines are veins in your eye. Federation Security seem to be getting mighty tough these days



The camera pans over the ray-traced hero as he prepares for launch

Format:	**PC/A1200**
Publisher:	**Ocean**
Developer:	**DID**
Release date:	**01/12/93**
Size:	**1 CD/7-8 disks**
Origin:	**UK**

Inferno, DID's new 3D space adventure, started off as a sequel to *Epic*, but has since developed into 'a game in its own right'. Then DID would say that – *Epic* was a game famed for not living up to its hype. It looked okay, but was too easy to complete and gave the impression of being unfinished, even though it was kept back months in development.

Many thought that DID's partner Ocean had rushed them into releasing it before it was ready. With *Inferno*, DID claims it's all different.

As MD **Martin Kenwright**, explains, 'With *Epic* there were so many things we wanted to do, but we just ran out of time.'

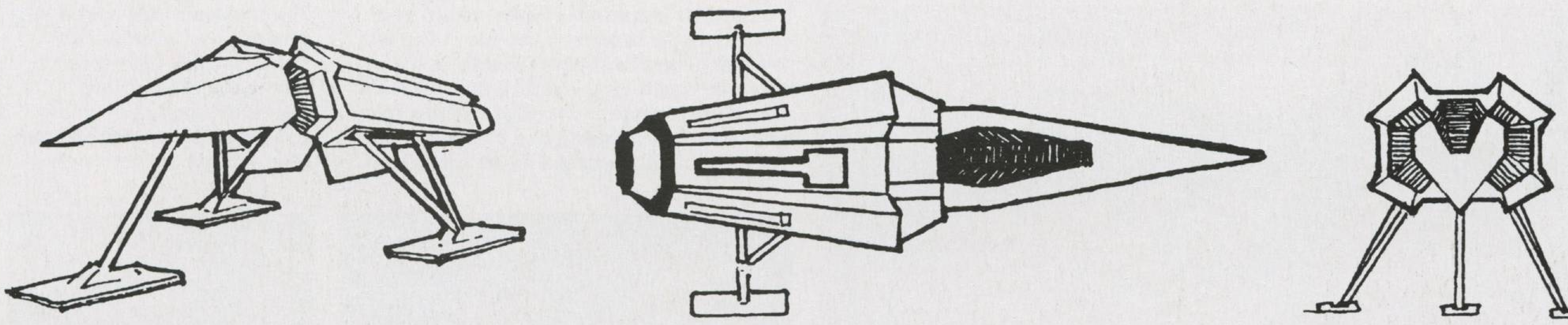
By contrast, *Inferno* and *TFX* have been given all the time they need. And *Inferno* is claimed to be all that *Epic* should have been, but finally wasn't.

The storyline is similar: It's set 90 years on from *Epic*, and you are a top pilot torn between the good and evil sides of the planet – the aliens learn of your abilities and try to turn you against your own people.

You are given a comic to establish the characters and set up the scenario. According to *Inferno*'s creator, **Shaun Hollywood**, this was designed to add another level of believability to the



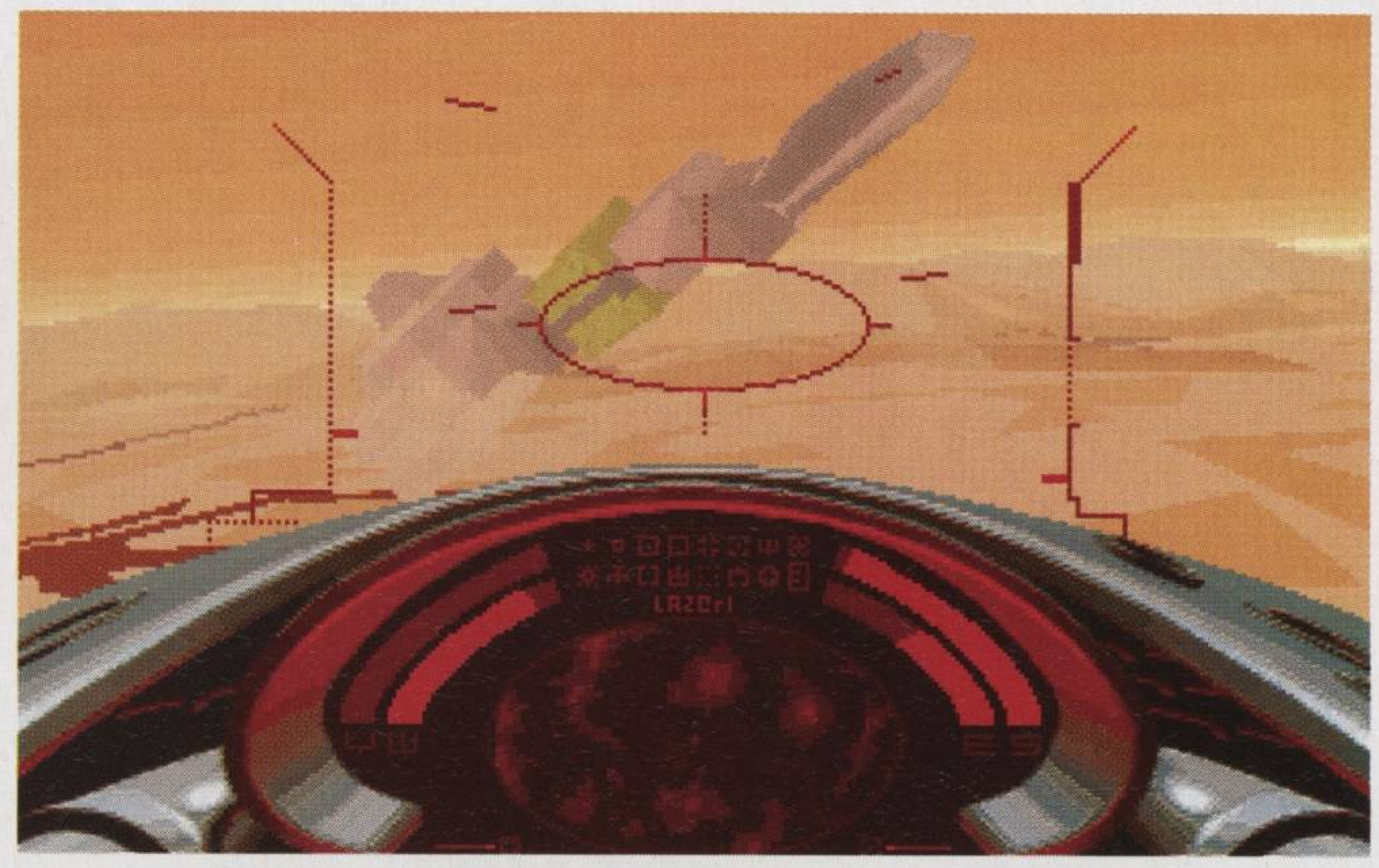
The hero's animation was rendered using *3D Studio* on the PC



Some of the original design sketches for *Inferno* (above), as penned by Shaun Hollywood, the game's creator. He also created a complete storyboard with comic strip and character designs



Inferno uses filled 3D polygons to create the inflight scenes. Here, a hulking great vessel strays into your line of fire, just *asking* to blasted into oblivion





Offering a variety of viewpoints, *Inferno* creates a truly cinematic feel. Your craft (left) skims the surface of one of the game's many planets, while the inflight view (above) features red lightsource shading to show the altitude of your craft – the higher you go, the redder it gets – so simple, but so very effective

'I wasn't trying to create a film-like game – it just turned out that way.' Shaun Hollywood – Digital Image Design

universe in the game. DID used **Shaun Phillips** – the artist on the Judge Dredd monthly – as the graphic artist.

'The main idea of the game is to give the player the illusion of depth and authenticity on a large scale', says DID's Shaun Hollywood. In the whole game there are seven planets and three moons – and you have total freedom to go wherever you want in the universe. There are 130 missions in total.

As Shaun explains; 'There has been a lot of talk about some games being interactive movies, but they're generally rubbish. I wasn't trying to create a film-like game with *Inferno* – it just turned out that way.'

Inferno has very sharp 3D graphics and mind-blowing music. Flying through worlds and across space you're presented with very smooth 3D images. All the out-of-game graphics were done in *3D Studio* on the PC, but DID used its own 3D engine for ingame sequences. And while music for most games is just an afterthought, *Inferno*'s soundtrack was all part of the original idea.

DID first tried to get in mainstream bands to record the music, but found them too unreliable. So Ocean's music man, **Barry Leitch**, called in the goth outfit, **Alien Sex Fiend**.

It may seem a strange choice, but the Fiends (as they're known to their friends) are one of Barry's favourite bands. He explains, 'We were trying to create a film soundtrack, but not make it orchestral. Sex Fiend thought they'd be good at film music.' DID flew the Fiends in from California – it took five weeks to record all the music.

While the Fiends come cheaper than most mainstream bands, it was still an expensive project. And the level of resources that were available for the game seems to be a bit of an issue at DID – in spite of the big-name backing from Ocean. According to Shaun, 'With *Inferno*, we wanted to prove that you don't need infinitely deep pockets to produce games to compete with the big US companies.'

Martin Kenwright is more direct: 'The games industry could be 20 times ahead of where it is now, if it wasn't for marketing and financial directors saying we don't want to spend another dollar. It's a real shame.'

The other big game in playtesting at DID is *Tactical Fighter eXperiment*. It's more than a straight flight sim: DID have emulated multimillion dollar flight simulators. At the heart of the game is DID's own 3D engine; *TFX* uses the fourth



Time for a change – this is the cell the bad guys use to hideously mutate your mind and body if you get caught at any stage in the game



The hero strides into battle in his highly functional footwear

Continued next page



The subtle art of peace keeping: if a country consistently fails to comply with your UN resolutions, try the direct approach

Passing over a small coastal town, you pause briefly to admire the view, the way the lights on the bridge twinkle in the brooding night sky... before arming your targeting computer and blowing the crap out of it. The startling use of colour really sets TFX apart form the flight sim crowd



The tradeoff with speed and power is, of course, fuel consumption. Here you're about to pull in at the airborne equivalent of an Esso station. Just don't turn your engine off this time





Choosing your weapon systems – you got 6,500kg of potential bombload, which you have to fill with missiles for each op



TFX coming in to land – the UN logo is a natty bit of texture mapping by DID's fourth generation 3D graphics engine



Hauling arsenal, you head skywards – on a peace keeping mission, no doubt

Continued

'It's all totally military-based. We've kept it really pure.'

Martin Kenwright – MD, Digital Image Design

generation of 3D engine and, according to Martin, it's even attracting interest from the military.

But 3D graphics, however wonderful, don't make a good game. The simulation in *TFX* is also very, very impressive. As Martin explains, 'It's all totally military-based. We haven't tried to create any fancy gimmicks – we've kept it really pure. But we've also tried to combine the best elements of arcade-style action with realistic simulation.'

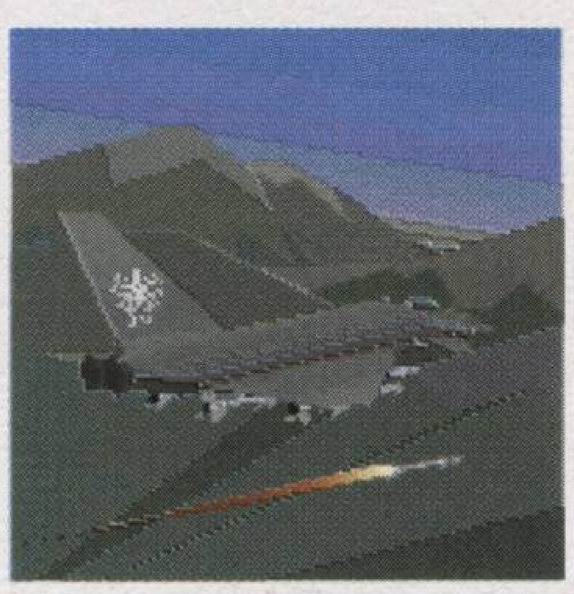
When you play *TFX*, the first thing that hits you is the detail of the landscape. The game uses full ordinance survey maps and files – thousands of square kilometres were coded into the game. In total over seven million square kilometres – over %5 of the landmass of the world – appears onscreen, with the hills, roads and mountains all in the right places.

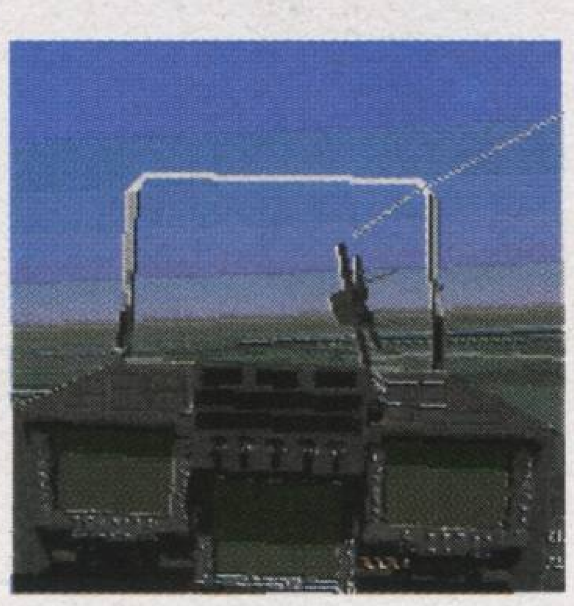
The level of detail doesn't stop there, as DID used top aeronautical engineers to design the inflight graphics. As Martin explains, 'Everything now is specialist, it's like film production – people for graphics, people for sound, full-time coders: soon game credits will roll off like in a Lucasfilm movie.'

TFX and *Inferno* are both nearing completion. And based on what **Edge** has already seen of them, PC owners will soon have a couple more good reasons to look down their noses at console owners.



The dark side of DID: (left to right) Shaun Hollywood, (centre top) Colin Bell, (below centre) Russell Payne, and MD Martin Kenwright





Firing off an air-to-air missile. Not at anything in particular, really. Just because you love that wooosh noise as it flies away from you

Credits

Inferno design: Shaun Hollywood
Programming: Russell Payne
Programming: Colin Bell
Programming: David Dixon
Programming: Jamie Cansdale
Programming: Nevil Plura
3D design: Paul Hollywood
3D design: Andy Bates
Graphics: Rob Ball
Sounds: Barry Leitch
Sounds: Alien Sex Fiend
TFX concept: Martin Kenwright
Main code: Colin Bell
Flight model: Rod Kennedy
3D design: Ian Boardman
3D design: Andy Gahan
Graphics: Donna Chippendale
3D rendering: Steve Wahid

Jurassic Park

Steven Spielberg's epic dinosaur movie has broken all opening boxoffice records, with US takings of over $100m in just 9 days – that's 21·7 million ticket sales. The movie opened with 434 prints across the UK and Ireland and took £4,875,137 in its first weekend, beating Batman Returns by over £2m



Photograph: courtesy UIP

A pint of latex, a dozen servo motors and a pinch of silicon. Boil for three minutes and...



PC and Amiga versions of *Jurassic Park* boast 3D interior sections in which you play a deadly game of hide and seek with the vicious velociraptors

Jurassic Park is backed by a million dollar licence, a new, high-speed 3D graphics engine, and enough hype to floor a stegosaurus. **Edge** checks up on the evolution of a monster

Format: **PC/Amiga**
Publisher: **Ocean**
Developer: **In-house**
Release date: **01/10/93**
Size: **6-7 disks/4-5 disks**
Origin: **UK**

It should come as no surprise to find Ocean responsible for turning Jurassic Park into a computer game. But while the Mancunian giant – some might aptly say dinosaur – is exceptional at picking up licences, lately it's had less success turning its intellectual properties into anything other than formulaic platform shoot 'em ups (*Lethal Weapon*, *Cool World*).

Jurassic Park is reputedly the first million dollar licence; and while the distinctive red and black logo will no doubt sell units, if the game isn't up to scratch Ocean's reputation could go the same way as the great lizards.

The storyline isn't promising. You play dinosaur expert Alan Grant and are tasked with negotiating the park's many hazards. You have to access the island's computer system, switch



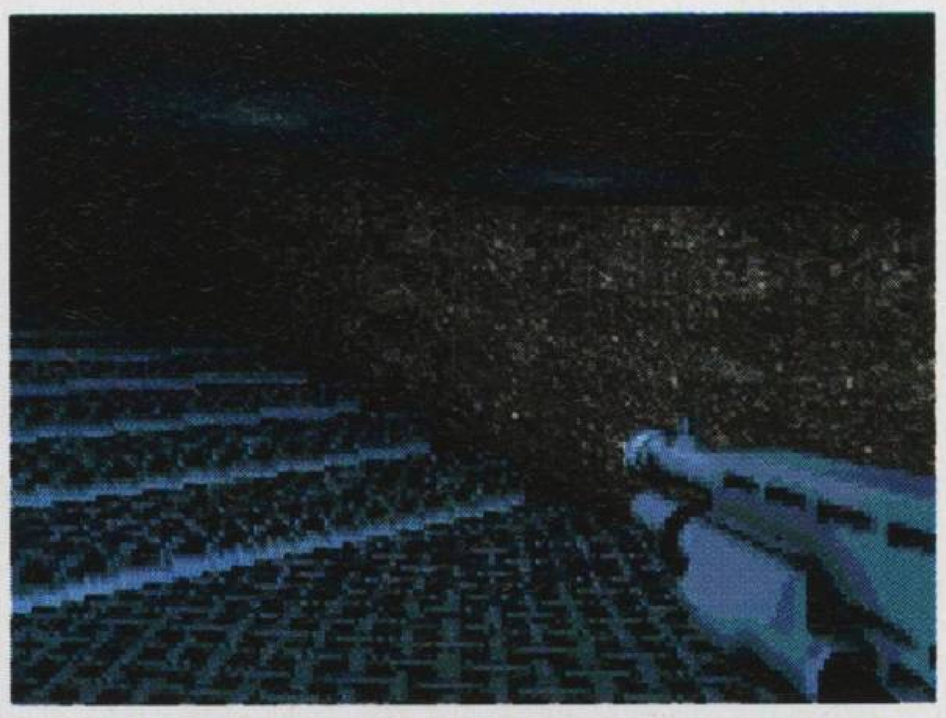
Photograph: © 1993 Universal & Amblin

T-rex: a monster of rubber and metal and cables. Steven's come a long way since Jaws

Continued next page



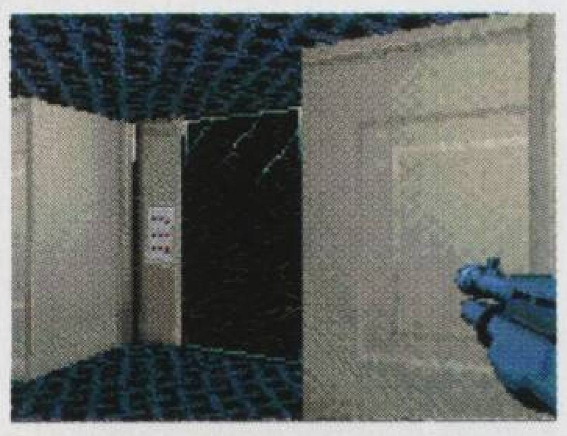
With a raptor heading straight for you, there's little option but to hide your RSPCA badge and let him have it with both barrels



One innovation is stairways: you can climb up and see the velociraptors below you

Inside

As you wander around the park, you'll come across storage facilities and power sub-stations (opposite). Here the game changes from overhead scroller to first-person perspective 3D. You have to you explore the dimly-lit corridors and rooms, while avoiding the raptors who have taken up residence therein. The PC and Amiga feature clever raptors – they follow you around, learn your movement patterns and wait in hiding. With atmospheric visuals and a suitably eerie soundtrack these 3D sections should be the highlight of *Jurassic Park*.



The 3D environment includes rooms and doors

Continued

electric fences on and off, collect various items and save the kids – all pretty standard stuff. However the game has been in development for the last 18 months, so this is no rush job. And rather than base the game on the slam-bang movie, Ocean have gone back to Michael Crichton's novel.

'All the versions are based on the book,' explains Ocean's newly-appointed PR manager, **Simon Altey**. 'Spielberg had to get the action of the book into two hours and show lots of dinosaurs. We had to create a game that would give as much enjoyment as possible, for as long as possible.

'We have the scene in the pterodactyl aviary and the triceratops stampede that wasn't in the film.'

Of course, at more than a million dollars a minute for the computer generated effects, you can see why Spielberg maybe skipped a few chapters along the way.

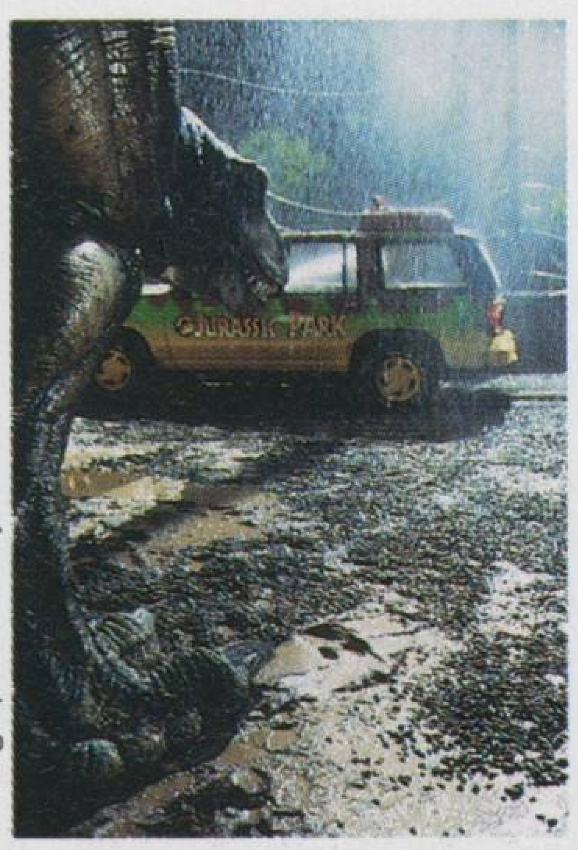
For Jurassic Park to have anything like the impact of the movie, the computer game had to be different, as programmer **Andy Miah** attests: 'The original scenario had to be approved by Spielberg, and he had to see the game occasionally in development. One thing Spielberg didn't want was another straight shoot 'em up or platform game.'

Which is odd, because that's pretty much what *Jurassic Park* amounts to. There's a 60-40 split of exterior adventure-strategy mixed with interior 3D sections; but it's all linked together by dinosaurs and their immediate extinction using a variety of heavy duty weaponry.

The real advances have been made with the Amiga and PC versions. A special 3D engine was developed on the PC to generate the fluid, filled vector graphics and provide total freedom of movement. Muted colours have been used to create a dark and eerie backdrop, and crank up the tension ready for your first encounter with the deadly velociraptors: the fastest, most dangerous dinosaurs in the entire park. Each raptor sprite contains 60 frames of animation to impart ultra-realistic movement and heighten the tension.

These interior 3D sections are very Alien-esque: armed with motion scanner and the inevitable big gun, you end up stalking different buildings in a kill-or-be-killed scenario. Each location is spread over several floors allowing you to climb stairs and look down as the dreaded raptors scurry past beneath – an innovative touch.

Likewise, programmer **David Chiles** outlined some of the graphical



Photograph: courtesy **UIP**

Meals on wheels: T-rex likes these crunchy things with the yummy soft centres





On the SNES

Ocean's Super Nintendo game is being coded in the States, and looks like it will be the last version to be completed. It has the same structure as the computer games, but is more of an arcade shoot 'em up. The 3D sections (opposite) include both raptors and also the brightly-coloured spitters. However, they have less intelligence than the PC and Amiga creatures and simply wait in rooms for you to find them, rather than follow you around.

The incredible expanding raptors. In reality, velociraptors were only three or four feet tall. For the movie they increased to about six feet, and in the game they tower above your player at around 12 feet. Some people should have their artistic licence revoked





Make too much noise and the artificially intelligent T-rex will home in on the ruckus with predictably grisly consequences...



Of course, in amongst all that strategic planning, puzzle solving and adventuring, there's still a fair amount of gratuitous dino-violence

Outside

The outdoor sections of *Jurassic Park* follow the player's character as he traverses the park. The scenery moves smoothly in eight directions, a feature achieved using hardware scrolling – something of a technical feat on the PC and Amiga. The park contains lots of things to collect, places to go and puzzles to solve. The computer versions require a lot more strategy than the arcade-oriented SNES version. Most of the larger dinosaurs also have artificial intelligence, so that they recognise sounds and track them down. If you run around blasting at anything that moves, you'll soon find yourself with a large audience – certainly in size if not in numbers.

techniques that were developed for the exterior sections: 'The most important thing we've achieved is the hardware scrolling, which is very difficult to do correctly on the PC and Amiga; it's been done before, but not successfully.

'We've used a treble-buffered edge scroll: there's a megabyte of buffer, split into three areas, each bigger than the screen size. While you display one, you'll be writing to another; the third buffer has nothing drawn to it except the background – everything behind the sprites – and the data for the edge of the screen is constantly updated to all three buffers.

'It's complex because things get out of sync after a while, so you have to keep resynchronising – roughly once for every screen's worth of scrolling.

'It took three weeks to get it up and running, but there was a specific bug that was a real pain to get rid of. Unfortunately it's the only way to get a decent arcade game on the PC, there's no other way of doing it: PC screen memory is a joke!'

THX-approved cinemas – like the Empire, Leicester Square – show off the film's superb soundtrack and effects; and the game tries hard to follow in its oversize footprints. Andy Miah demonstrated the game's intro music: an atmospheric, sultry piece that sets the mood perfectly as the all-too-familiar Jurassic logo appears.

'We mimicked the movie's music, but it's not sampled,' says Andy. 'However, we did manage to sample the T-rex's scream straight into the game, and most of the animals have been digitised from the movie. There's 50K just for the sounds.'

The ingame music is equally impressive, rapidly altering to suit the onscreen action – a feature which is becoming increasingly important in new software.

So, as long as all the elements of the game gel together, it looks like Ocean can look forward to October 1st, which is Jurassic – and judgement – day for the game. E

Credits

Amiga exteriors: Andy Miah
Amiga 3D interiors: Rob Walker
PC exteriors: David Chiles
PC 3D interiors: Les Long
3D support: Man Sang Ho
Exterior sprites: Bill Harbison
Exterior sprites: Ray Coffey
Animation player: Phil Trelford
Ext backgrounds: Colin Rushby
Ext backgrounds: Jack Wikeley
Ext backgrounds: Matthew Wood
Int backgrounds: Julian Holtom
Int backgrounds: W Lancashire
3D raptors: Craig Whittle
3D raptors: Martin McDonald
3D raptors: Dawn Drake
Music: Dean Evans
3D rendering: Steve Wahid

You can climb stairs and look down as dreaded raptors scurry past beneath

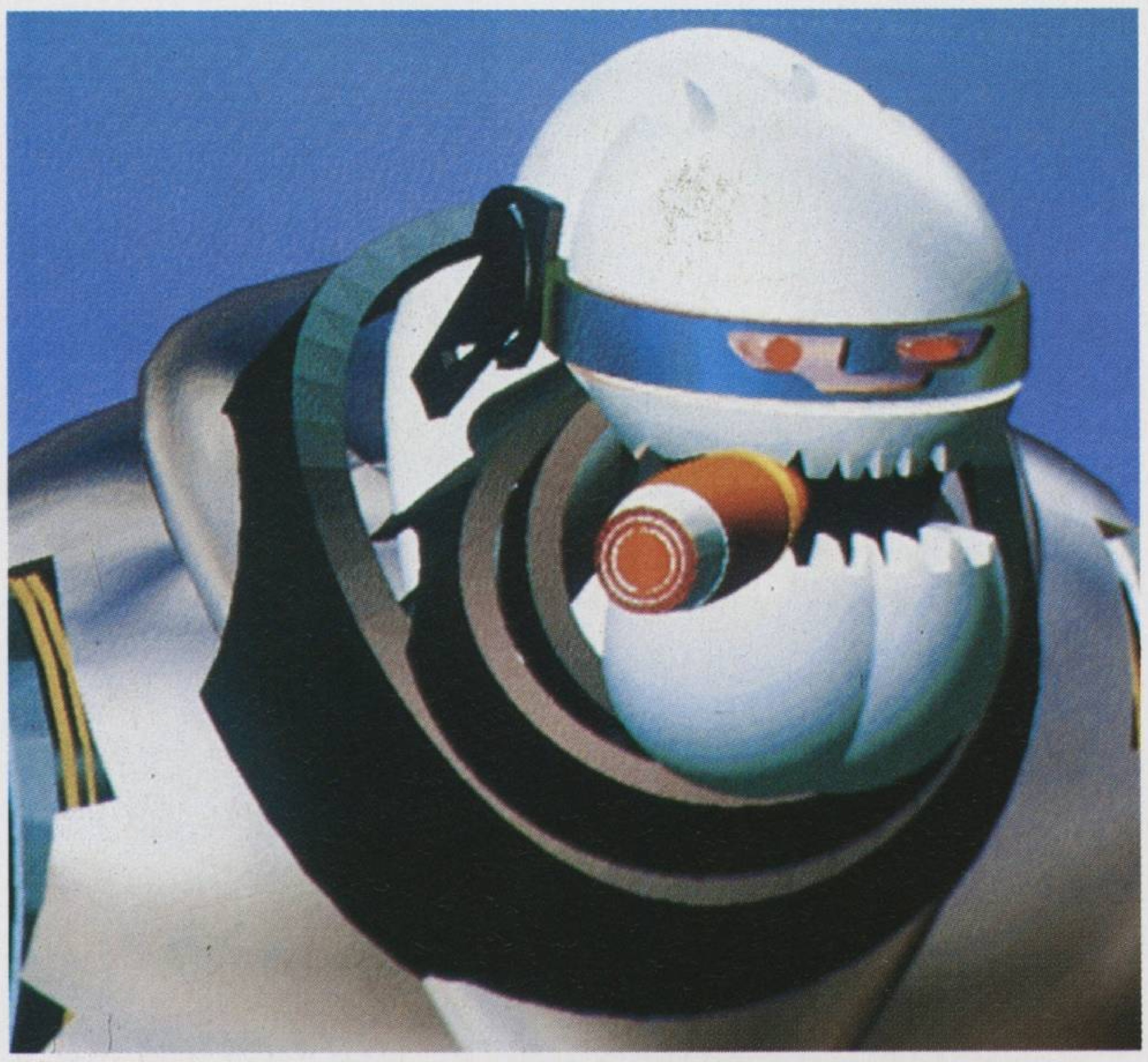


Photograph: courtesy **UIP**

T-rex takes a closer look at lunch – he's not bothered about eating things off the floor

Rise Of The Robots

Rise of the Robots plays like an *SF II* clone, but looks very, very different. With graphics like these, who needs gameplay? **Edge** investigates



'Got a light mate?' Graphics from *Rise Of The Robots* are beautifully rendered. These are the 3D images being used in the PC and Amiga versions. Let's hope it all looks this good, eh?

Format: **PC (CD)/Amiga**
Publisher: **Mirage**
Developer: **Instinct Design**
Release date: **01/12/93**
Size: **1 CD/TBA**
Origin: **UK**

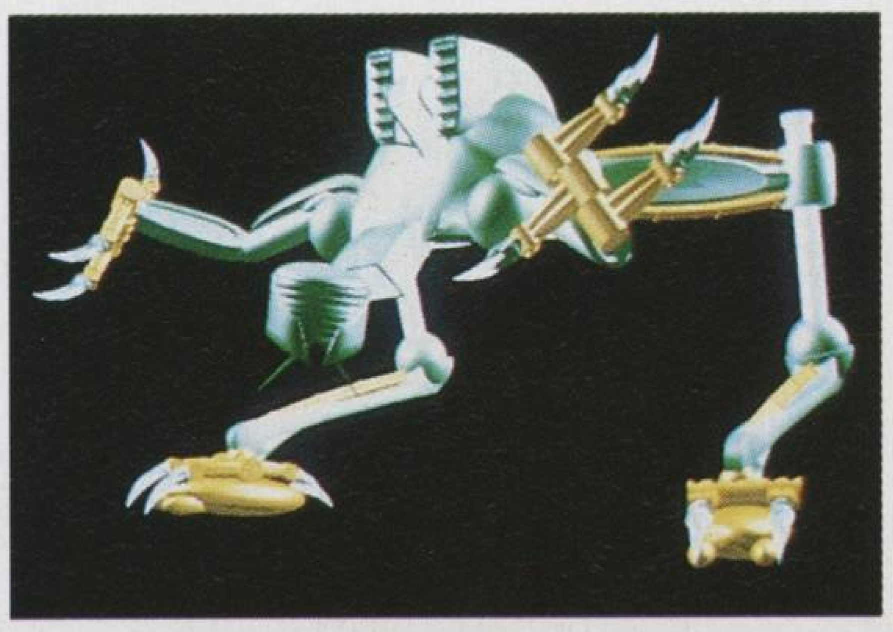
It was only a matter of time before game designers started using real 3D effects – like 3D morphing – as seen in films like Terminator 2. *Rise Of The Robots*, the first game from Mirage's new team of in-house developers, **Instinct Design**, does just that, and manages to look a bit special, too.

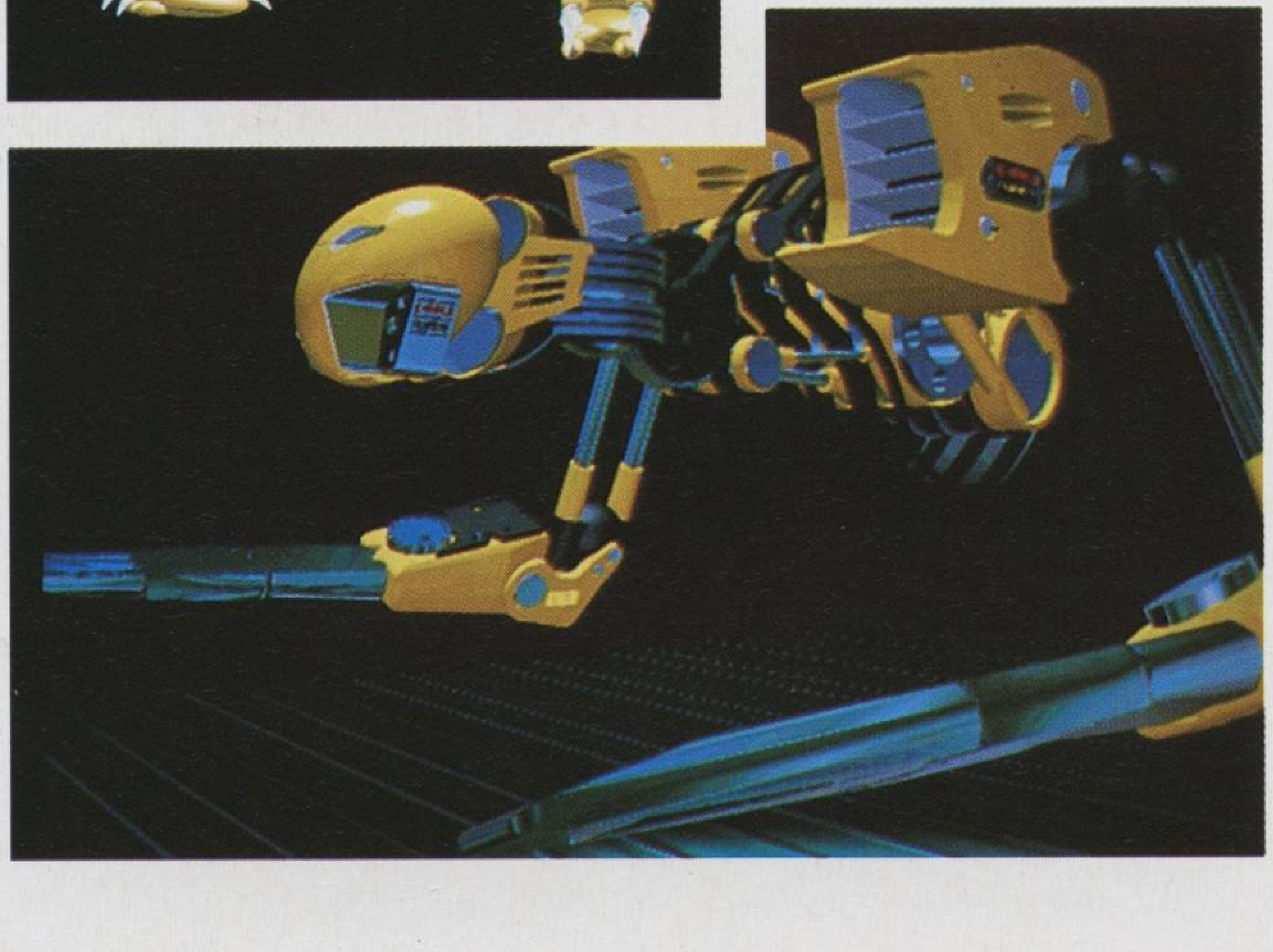
One-on-one beat 'em ups don't usually rely on 3D modelling software and high-quality ray-traced graphic images. In *Rise Of The Robots* each body part is modelled independently from blueprints, and then linked to let the robots animate convincingly. The animation is stunningly realistic and smooth on the PC version, with similarly impressive results promised from the Amiga version.

The game all evolves around Metropolis 4, a futuristic city, and the Electrocorp building where military and industrial robots are manufactured. All human staff have been replaced by a super-intelligent robot – the 'Supervisor' – programmed to manage the complex. But an ego virus infects the Supervisor, sending him haywire and power mad. So, the company sends in a Cyborg to sort him out. He faces five robot adversaries as well as the Supervisor, each one with its own artificial intelligence.

If ex-Bitmap Brother **Sean Griffiths**, who heads the Instinct Design team, can match these stunning visuals with varied and exciting gameplay, this could be an very interesting product. **E**

An ego virus infects the robot, sending him haywire and power mad





Some of the robots (left) look more like insects than anything else

Not only are the graphics well rendered (below), they're also superbly designed and implemented

Legend of Dracula X & Castlevania: Bloodlines

Edge takes an early look at new additions to Konami's ever-popular vampire series, *Castlevania*

Format: **PC-E CD/MD**
Publisher: **Konami**
Developer: **In-house**
Release date: **TBA**
Size: **Super CD/8Mbit**
Origin: **Japan**

Possibly Konami's most popular series to date is *Castlevania*, or the *Legend Of Dracula* as it's known in Japan, and their commitment to multiple formats continues with the launch of new versions of *Castlevania* for the PC Engine CD, Mega Drive, and Super NES.

The title of the Engine version is curiously blessed with an 'X', rather like Capcom's new *Mega Man X* game. To the untrained eye at least, it looks like it's based on the first *Castlevania* game on the NES. But it's infinitely better. In fact, if it matches the quality of Konami's other Engine releases, it should be another essential purchase.

Together with the Mega Drive version, *Vampire Killer*, or *Castlevania: Bloodlines* as it'll be known over here, and the rumoured *Castlevania V* for the SNES, these games amount to nothing less than a fully-fledged vampire assault from Konami.

As Konami prepare to quit the European home computer market, it's interesting to note that they're still committed to the Japanese market, producing games for Sharp's X68000. And guess what the latest Konami game is to appear on the X68000? *The Legend Of Dracula*. Seems like Konami really like to get their teeth into the *Castlevania* series.



The Mega Drive version of *Castlevania* might not look too colourful in these early screenshots, but if it's as atmospheric as the SNES game it'll be worth the wait



Simon (or is it Christopher?) can swing from his chain and kick the baddies mid-swing. Useful for scattering the bones of skeletons

The PC Engine game contains some really gruesome creatures as end-of-level bosses



The familiar weapons from the other versions of *Castlevania*, such as the whip and chains, remain for you to use in Legend of *Dracula X*



These games amount to a fully-fledged vampire assault

Landstalker



There are all kinds of things to do in *Landstalker*. It's a hectic game. This, however, is one of Ryle's less taxing moments though

Format: **Mega Drive**
Publisher: **Sega**
Developer: **Climax Entertainment**
Release date: **Oct (UK)**
Size: **16 Mbit + BB**
Origin: **UK**



Zelda fans will be pleased to learn that combat is as simple as a slash of a sword. That's because it's an action RPG, you see

Sega's 16 meg answer to *Zelda* was extremely well received in Japan when it was released shortly before Christmas last year. In fact, it outsold every other Mega Drive game, with its isometric viewpoint proving especially popular with role-playing game fans over there.

Landstalker is by Climax Entertainment, one of Sega Japan's affiliate development teams, and takes a more action-orientated approach. The game scrolls through a wide variety of different environments including villages, castles, swamps, churches, caves and waterfalls. And the quest and the interaction are way beyond most RPG stuff on the MD. The long-awaited English text version will be here for the next issue of **Edge**. Look out for the review.



See this perspective? it's the 'Diamond-shaped Dimension System 520', according to co-designers Sonic Team and Climax Entertainment





Adol, star of *Ys*, in his home town, Esteria (above right)

Hero Adol (above) has to brave the elements to save his land. Again

YS IV

Format: **PC-E CD/SFC/MD-CD**
Publisher: **Various**
Developer: **Falcom**
Release date: **Oct/Dec TBA**
Size: **CD/Cart (unknown)/CD**
Origin: **Japan**

Perhaps the best PC Engine RPG ever was *Ys Books I* and *II* for CD ROM. Since then we've had an inferior sequel *Ys III*, but now *Ys IV* is coming. The first version, *The Dawn Of Ys* will appear on Super CD for the PC-E in October, then on Super Famicom and Mega CD. On the Engine it'll be called *Ys IV: The Dawn Of Ys*, on the Super Famicom, *Ys IV: Mask Of The Sun*. Expect news of English text versions soon.



Eek! Mario's got a Yoshi egg on his head (left). The fairy character rushes to the rescue

Mario & Wario

Format: **Super Famicom**
Publisher: **Nintendo**
Developer: **In-house**
Release date: **August 27 (Japan)**
Size: **8 Mbit**
Origin: **Japan**

Apart from *Mario Paint*, Nintendo have done little to support their Super Famicom mouse peripheral. *Mario and Wario* is about to change that. It puts you in control of a creature that has to help Mario through the levels. Why does he need your help? 'Cos his vision has been obscured by Yoshi eggs thrown by Wario. It looks fun, but at its price it's unlikely to have the weight of *Super Mario Collection*.



Move the blocks to make a path for Mario to escape. It looks like *Rodland*. And *Lemmings*

Virtua **Racing**

Format: **Mega Drive**
Publisher: **Sega**
Developer: **In-house**
Release date: **TBA**
Size: **16 Mbit + BB**
Origin: **Japan**



an early development shot from *Virtua Racing* (above). And (right) here's what a few more month's work has produced



Virtua Racing, the conversion of the state of the art racing game, uses a DSP chip to improve the Mega Drive's number crunching and polygon generating. There'll even be battery backup for keeping your best times.

If the frame rates hold up, this could be a game worth waiting for. Still, bearing in mind what the Mega Drive's polygon handling abilities are like, it'll have to be an impressive chip to keep screens this detailed moving at a sufficient rate.

World **Heroes**

Format: **Super Nintendo**
Publisher: **Sunsoft**
Developer: **In-house**
Release date: **Oct (UK)**
Size: **16 Mbit**
Origin: **Japan**



World Heroes on the Super NES. Large characters, but, as on the Neo Geo, fairly shallow gameplay

Sunsoft's 16 meg conversion of the Neo Geo beat 'em up has colourful graphics and smooth animation, but after the frenetic gameplay of *SF II Turbo*, its most notable feature is its sluggish pace. The backdrops are smart enough, and the sprites are faithful to the arcade, but the lack of speed lets it down badly. The original was never a match for *SF II* anyway.

It's unlikely that this will excite people much, although you know what beat 'em up fans are like.



The graphics aren't too bad, but it's slow next to *SF II Turbo*

New Scene

Edge takes an early look at the best Japanese games in the pipeline

After the superbly detailed but shallow vertical scroller, *Pop 'n Twinbee*, Konami have taken the characters and put them in *Action Twinbee*, a (yawn) platform game with similarities to *Sonic*.

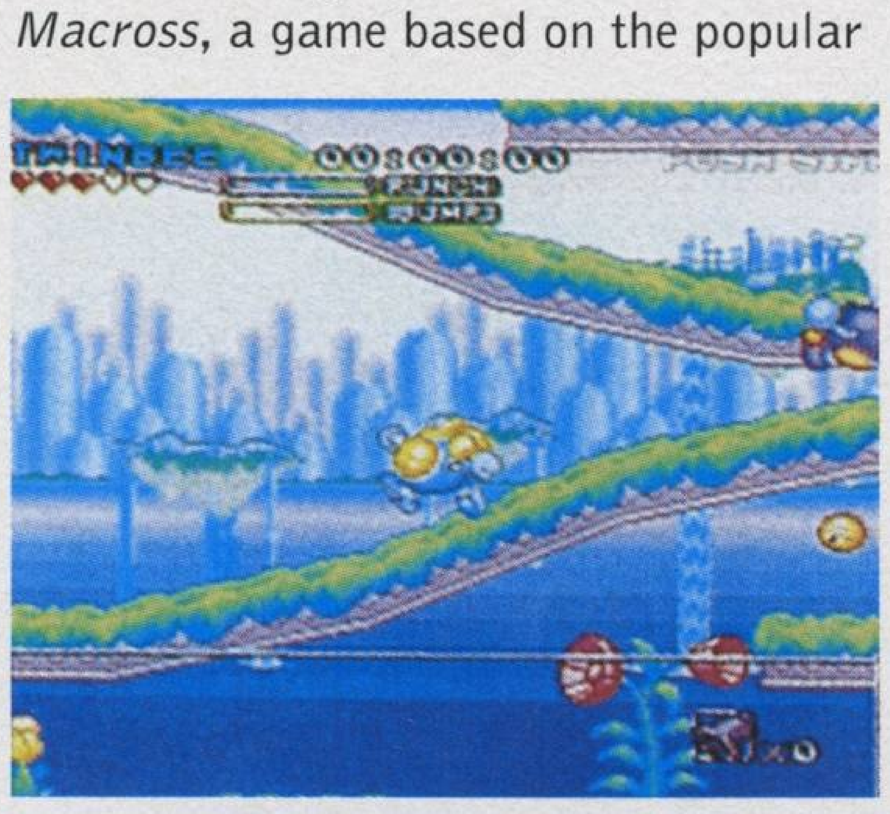
And the sequel to *Legend Of The Mystical Ninja*, or *Ganbare Goemon 2* by its Japanese name, is starting to shape up too. Both will be shown at Famicom Space World '93 in Tokyo this month. Oh, and even further away is *Tiny Toons 2* for the SNES.

One of the many shoot 'em ups to have appeared on the CD ROM system for the PC Engine was NCS's *Macross*, a game based on the popular anime series in Japan, and the coin-op of the same name. The new game that's to appear on the Super Famicom is a version called *Macross Scramble Valkyrie*, possibly linked to the new coin-op that surfaced in Japan recently. Zamuse are handling it and so far the graphics look really great.

New games for the Neo Geo are slow at the moment, with the 200 meg RPG *Chrystalis*, and *Magician Lord 2* being shelved in favour of beat 'em ups. The latest is *Samurai Showdown*, and *Art of Fighting 2* is a few weeks further down the line. Some things never change, do they?



Heavens! A beat 'em up for the Neo Geo – it's *Samurai Showdown*



Twinbee and Winbee are back in... *Action Twinbee*. Looks cute

PC & AMIGA SOFTWARE

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Title	PC	Amiga
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3DO



You've heard about it. You've seen the pictures... But don't believe all you've read about 3DO. **Edge** looks beyond the hype and asks: is 3DO really the ultimate CD games machine, or is it just vapourware?

The **real** deal?

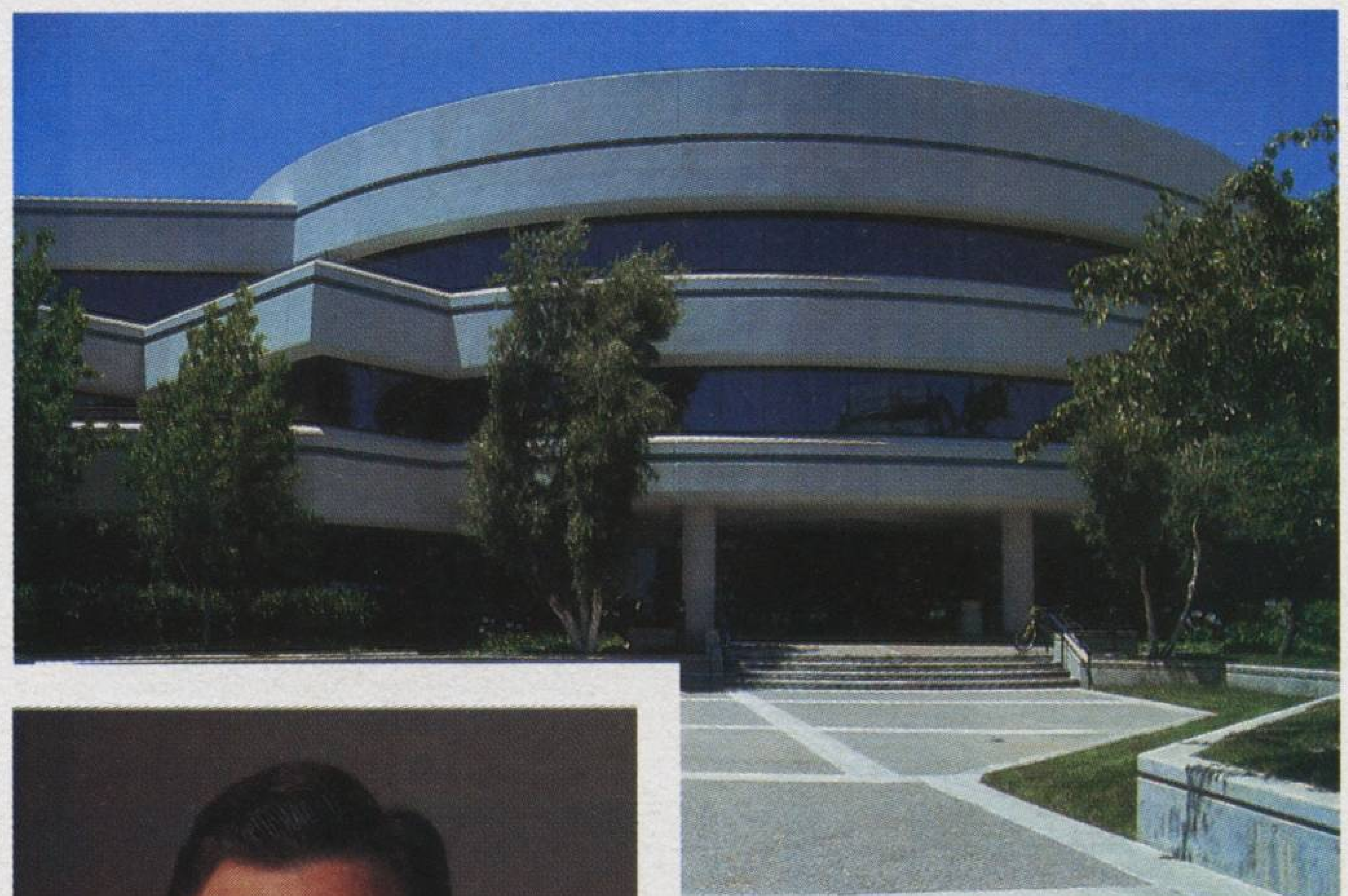
‘There’s never been a rise in performance of 50 times like this’

Trip Hawkins, boss of the 3DO Company

‘I pressed the Disc Eject button. There wasn’t even a disc in the player tray’

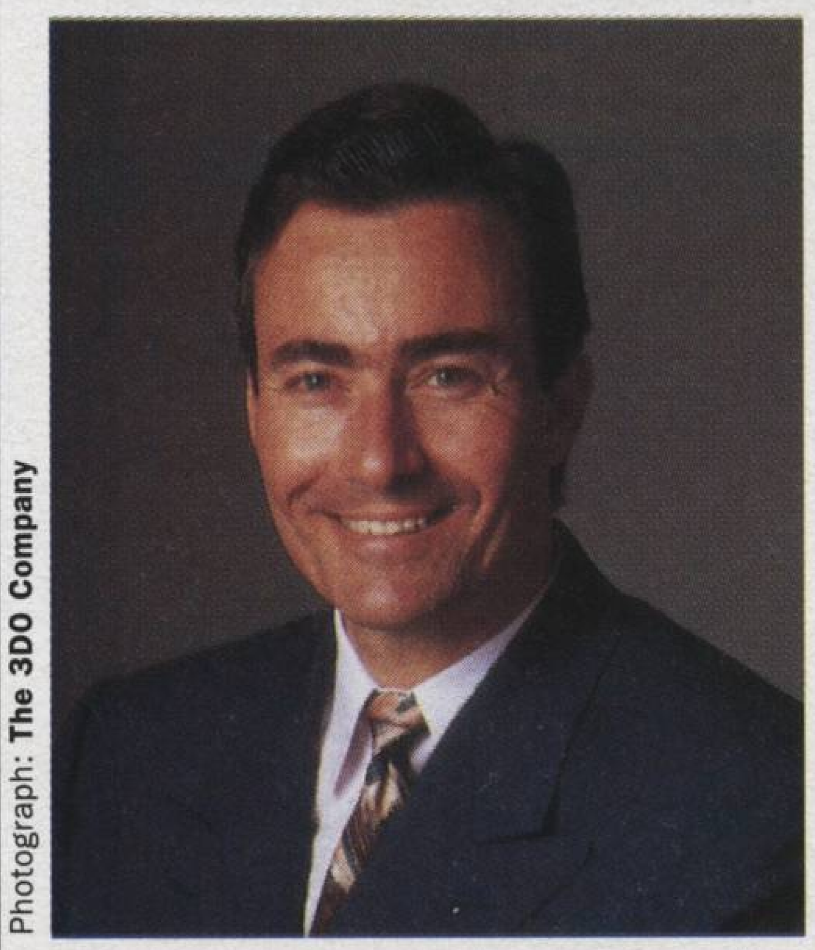
Barry Fox, journalist

3DO



Photograph: **Jez Black**

Real estate: 3DO’s HQ, San Mateo, California, used to belong to EA



Photograph: **The 3DO Company**

Trip Hawkins, 3DO Company boss... can his machine match his dream?

What exactly is 3DO? Firstly it’s a Digital Interactive Multiplayer – a powerful CD-based home entertainment system that will cost about $700.

The 3DO, being made by **Panasonic**, is scheduled to hit the States in October.

But 3DO’s more than that. It’s also the name of the Californian company behind the machine. The 3DO Company is the child of **Trip Hawkins**, ex-president and chief executive of **Electronic Arts**. The company has yet to ship a single product, yet its first share offer valued it at $300 million.

3DO’s raison d’étre is its potential to become a standard. Remember how VHS beat Betamax and Video 2000 in the race towards a standard for home video? Well, 3DO wants to be the VHS of interactive entertainment, and it has secured the crucial backing of EA, **AT&T**, **Time Warner**, **Matsushita** and **MCA**. →

At the Chicago Consumer Electronics Show in June, **Trip Hawkins**, The 3DO Company’s charismatic leader, sold 3DO to the games industry. And he sold it just as hard and impressively as people had expected him to.

Heads did indeed nod, jaws duly dropped and software companies positively purred over the multitude of development opportunities. And while most agreed that this looked like the future of interactive entertainment, some suspected they were being taken for a ride. And not just on the 3DO publicity bus. Hardware wasn’t finalised and yet systems were shown running games, and some of 3DO’s technical claims seemed to go just a little too far. Was industry golden boy Hawkins trying to pull the wool over people’s eyes?

While 3DO stole a hefty chunk of **Sega** and **Nintendo**’s glory at CES, it’s no secret that the majority of 3DO software running at the CES was actually being generated by Apple Mac Quadras (the same workhorse used to design **Edge**, no less). Ah, but 3DO wanted it to remain a secret, all the same.

After all, you don’t wimp out just because your demo units aren’t finished in time for the show. You fake it. Or simulate it.

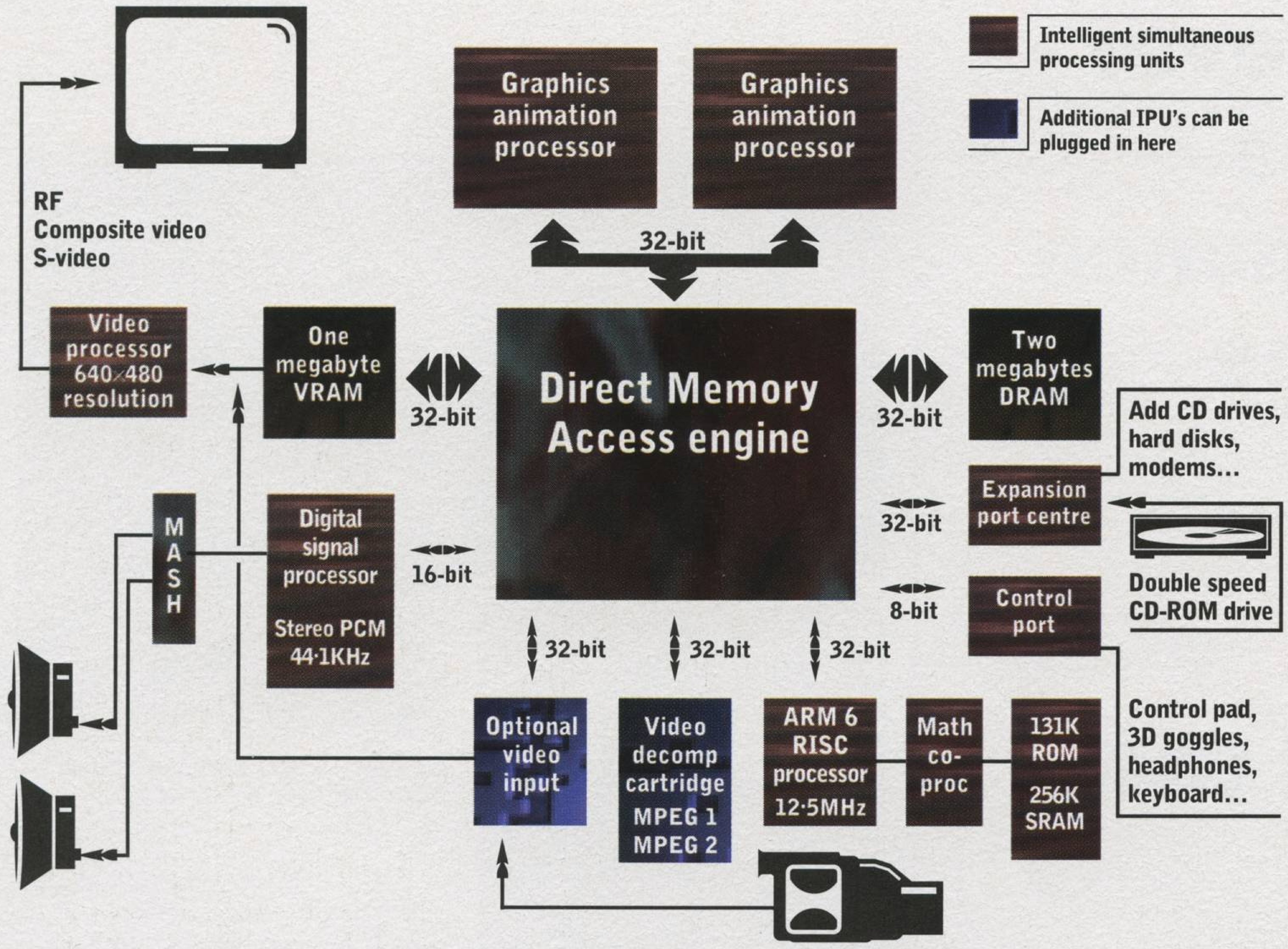
Think about the irony. Fast, exciting 3DO games on display everywhere, and not a single fully-working 3DO unit in sight.



Spectrum Holobyte boldly goes onto 3DO with *Star Trek: The Next Generation*

Continued next page

techview: multimedia



3DO's architecture is a mixture of 32-bit RISC processing supported by a Direct Memory Access engine for high-speed data movement, and a pair of custom animation engines that work independently of the CPU. These produce high-resolution images that can be warped and then lit from any direction. Impressed?

← **The boldest** claim 3DO have made, is that their hardware is '50 times faster than conventional 16-bit systems'. And the strangest thing is, no-one seems to be questioning it; just believing it, and telling others they'd better believe it too. But with 3DO skirting around the edges of technical details, a more detailed analysis is the only way to put things in perspective. So just how powerful is 3DO?

32-bit RISC processor

The RISC (Reduced Instruction Set Computer) Central Processing Unit used in the 3DO is called the ARM6 and has also been used in the Acorn Archimedes home computer. While the clock speed doesn't sound much at 12·5MHz, it's a true 32-bit chip and it will execute most instructions in one, sometimes two cycles. For a speed comparison, the ARM6 in the 3DO is roughly equivalent to an Intel 486 running at 33MHz. Pretty damn fast. There are some differences. For a start, a 486's speed is hindered by things the 3DO just won't have to think about. Things like a RAM cache, segment architecture, and having to run Intel's 8088-compatibility code – all these have to be factored into speed. 3DO's RISC architecture allows it to streamline a lot of the things a 486 or any other Industry Standard Architecture (ISA)-based processor is burdened with.

And what's more, 3DO's got some nifty graphics hardware in the form of the twin cell engines. Now these *are* fast – faster even than the 3DO's RISC processor.

As for that elusive '50 times faster' factor, the 12·5MHz clock speed of 3DO copes with about six million instructions per second – making it in raw numbers about six times faster than the SNES and Mega Drive CPU. Not 50 times faster.

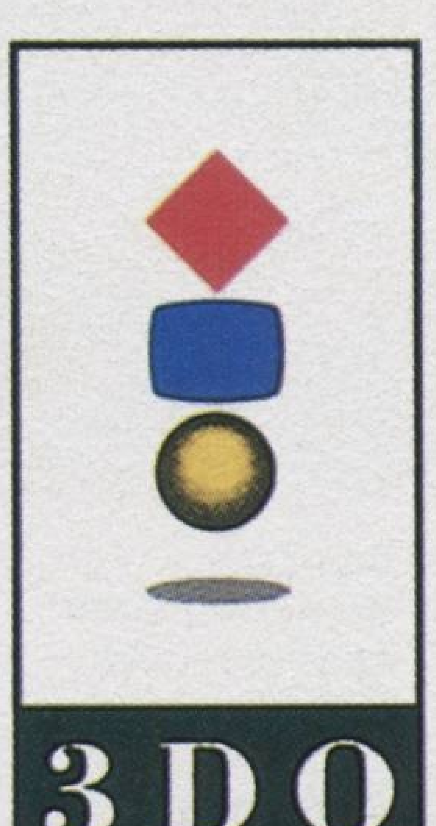
Animation processors

The key to the system's high-performance architecture is a specialised pair of animation engines, that can, it's claimed, display or move up to 64 million pixels per second. That's compared to the mere one million pixels per second average of 16-bit systems, and the three million pixels per second average of 32-bit systems. These engines organise the graphics into 'animation cells' similar to the graphics engine in the Atari Lynx.

3DO's animation cells are high resolution, full colour images, that can be moved, scaled, rotated, warped, texture-mapped, lightsourced

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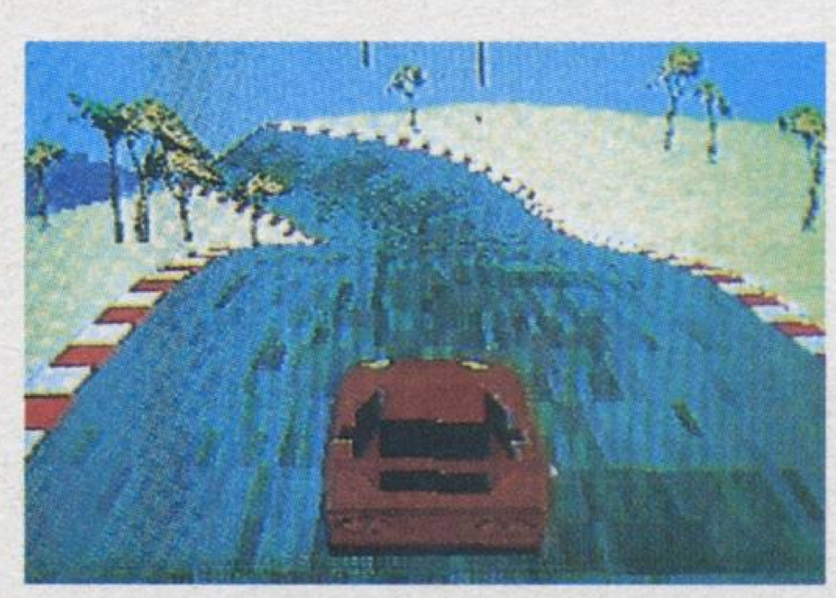


In fact, the only units that did manage to run something during the show were 'single-task' machines running things like CinePak video demos.

And it wasn't just 3DO who were cheating. Journalist **Barry Fox** describes the Panasonic stand at CES, 'A Panasonic player was running a car race game and the demonstrator told me it was a 'working' player. I pressed the Disc Eject button. There wasn't even a disc in the player tray. The wires from the joypads looked as if they went into the backs of the players. In fact, they went through holes in a partition just behind the backs of the players. From there they ran to Apple Quadras.'

After the CES Trip Hawkins insisted that 'things were unfinished,' and when quizzed about the computers, he admitted that the demonstrations at Chicago had relied on Quadra development systems and on players capable of performing only single tasks. But he also stressed that the players shown at the CES did not contain the 'final chipset'. But Panasonic in the US claimed the players were 'final prototypes' and 'complete', and only the program software had come from the hidden Quadras.

The 3DO hardware was far from being finalised even by the time the Chicago CES took place back in June. And rather than showing towering stacks of computer hardware 'supporting' their unfinished little black boxes – and thus potentially undermining all their surefire claims about the 3DO system meeting its launch – things got a little bit sneaky and underhand. Besides, very few



One of the many 3D texture-mapped games being demonstrated at the CES – *Grease And Grunge*

and even made transparent with the aid of 3DO's Cinematic Software Tools. These cell engines draw the images while the RISC CPU calculates where the images are going. For pure polygon generation as seen in games like *Starfox*, and texture-mapped 3D as seen in things like *Forgotten Castle*, 3DO is exceptionally fast.

DMA Engine

One of 3DO's strongest features is its DMA engine. Direct Memory Access enables the system to shift around huge chunks of data within its three megabytes of memory without using the CPU. And 3DO can do it faster than 16-bit technology.

If you're doing 'normal' DMA, 3DO can move about six megabytes a second, compared to 2·6 megabytes a second on 16-bit, such as the SNES – two-three times faster. However, 3DO has something called 'Sport DMA' which moves longwards in a cycle. This means that instead of the DMA moving data at 12·5 megabytes a second, it moves at four times that – 50 megabytes a second.

In fact, this is the only equation with a 50 in it, and it still isn't 50 times faster than the DMA speeds of 16-bit technology, just 20 times.

Video display

Now, this is really misleading. On paper, 3DO claims that the system is capable of a resolution of 640×480 pixels. This just isn't true. 3DO only has a 320×240 video memory, not 640×480, but it is capable of *looking* like 640×480. The hardware cheats by comparing adjacent pixels and producing a new, intermediate pixel (horizontally *and* vertically) by averaging the two colours. If you have a black and white pixel next to one another, the new pixel would be grey.

By anti-aliasing the pixels in this way, you end up with a smoother gradation between pixels, but it's certainly not a true high-resolution screen.

And, like the Amiga in interlace mode, the screen constantly flickers. This is negligible during play when there are loads of graphics moving about, but on text screens the effect is less than pleasant. Sadly, there's nothing you can do about it.

Finally, the 3DO system also has the ability to take two separate pictures and fully interleave them to give stereo imaging for 3D glasses.



Photograph: The 3DO Company

'I don't think it's too early' says Trip Hawkins, CEO of The 3DO Company. 'The technology is good enough to take a sufficient leap forward at a reasonable price. I know it's going to work.' For his sake, it had better...

So finally, the system is powerful – faster than a 486 PC and way ahead of current 16 or 32-bit technology. But without defining the benchmarks (things like processor speed or polygon generation), comparisons like '50 times faster' are worse than pointless: they are misleading. 3DO doesn't need this kind of number juggling and tricksy marketing. The truth is quite impressive enough. →

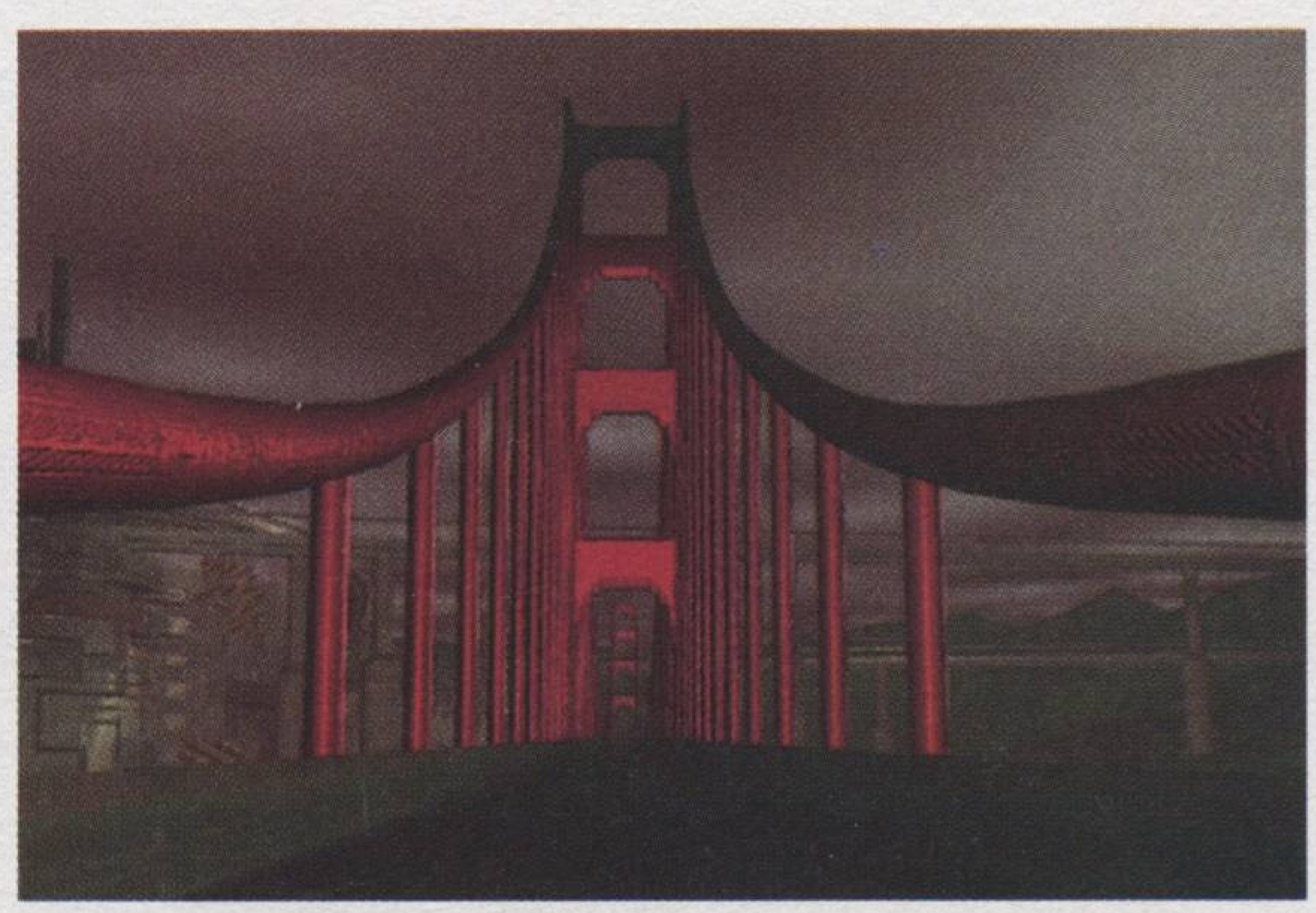
people bothered to ask any awkward questions.

3DO is still scheduled for an October release but there are doubts about the company's chances of achieving it. In the words of one 3DO developer, 'If The 3DO Company make their October deadline it will be a miracle, honestly. For it to ship in September, Panasonic should be manufacturing 3DOs now [and this was July]. You can't manufacture something that ain't finished.'

And with the RAM being boosted from two to three megabytes in late July, the system was hardly what you'd call finished. Of course, 3DO remain resolute in their promise of the system's onsale date, 'We're throwing all the final switches and there will be machines in the market place in October', claims 3DO senior vice president of software, **Bill Duvall**. 'It doesn't take three months to do the manufacturing and I think some of the concern has been about whether the chipset will be ready in time. The boxes will be on a boat shipping over in September.'

Whether the system makes the deadline or not, a common view is held that the company has been far too ambitious within the machine's tight development cycle. Some say they should have scaled things down a bit or given their hardware people another three to six months to really iron out the technical problems.

Still, at least the guys at 3DO are trying to help developers with



***Mega Race* is a smart rendered 3D game from top French developers Cryo (*Dune I & II*)**

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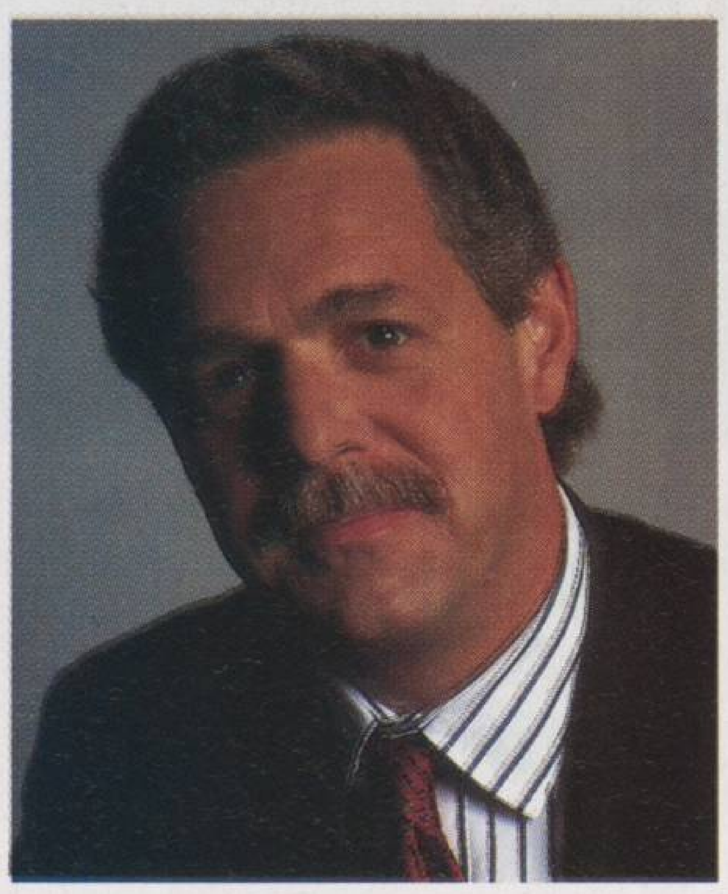
techview: multimedia

Electronic Arts



Photograph: Jez Black

Close to the 3DO building in sickeningly sunny San Mateo you'll find EA's impressive HQ



Photograph: Electronic Arts

Stewart Bonn, in charge of CD-ROM development at EA

As one of the most committed partners in 3DO, **Electronic Arts** is taking 3DO very seriously. And with EA's founder and ex-chief executive **Trip Hawkins** manning 3DO's helm, EA is counting on big changes in the world of home entertainment. **Edge** spoke to **Stewart Bonn**, the man behind EA's CD-ROM development.

Edge Why did EA get involved with 3DO?
Stewart Bonn 'Trip Hawkins and some other EA people decided to sponsor a research and development project to come up with a new product, and in particular, a potential hardware standard. We met the **New Technologies Group**, who were also keen for a new hardware standard, and it took off from there.'
Edge So how do you think 3DO compares to other CD systems?
SB 'The jury is still out on whether a CD drive attached to some of these other systems is really comparable to playing from RAM and hard drives, or in the case of consoles, from a cartridge. But I certainly haven't seen anything on the Mega CD that says 'Buy me'.

'3DO addresses a lot of the typical CD access problems by including a double-speed CD drive, and we're counting on the architecture of 3DO's hardware to make the most of the storage ability of CD-ROM.'
Edge So what's EA's approach to the 3DO hardware?
SB '3DO's so damn fast that there are a bunch of things that you can do to create motion and interesting things on the screen to offset the need to stream video off the CD. I think we're going to have the sort of gameplay that videogame players really like, and not the sluggish stop-start gameplay that CD seems to give on other systems. We're reinventing technology in many ways.

'The stuff we're doing on 3DO has seen a complete demolition of all previous techniques. For example, we've had to completely rethink the way football and other sports work onscreen – and the way rendering happens in games like *Shock Wave* is completely unique.'
Edge But 3DO still hasn't got high-quality full-motion video as standard. Surely there are problems only having MPEG technology as an option?



Road Rash **on 3DO. A far cry from the relatively barren Mega Drive version**

SB 'I think MPEG in itself is a problem, as it offers something that no one really needs in the games market. It's good kit but it does nothing for gameplay.'
Edge But 3DO does have CinePak. Will you be using that to create movie-style effects?
SB 'Yes, we will be using CinePak, but sparingly. For example, in *John Madden Football* on 3DO you'll see a lot of video, but it's only in bits of digitised commentary used for effect. We're not that impressed with CinePak, so, wherever we can, we'll be photo-composing scenes, instead of using video streamed off the CD.

'Using photorealistic images on both backgrounds and foregrounds, and animating them separately with the hardware, we get a far superior effect to just running the whole thing through CinePak.'
Edge Will your commitment to 3DO be affecting your support for other systems?
SB 'No. That's part of the reason why all our 3DO stuff is achieved with additional

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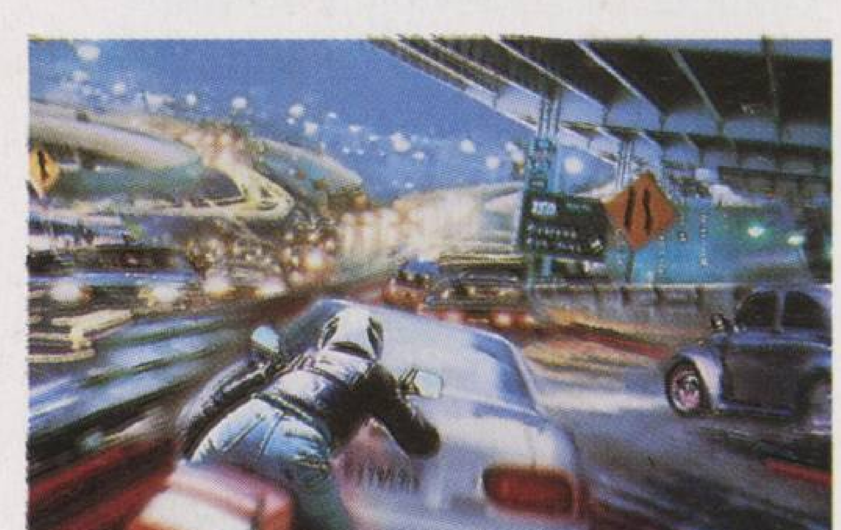


'A lot of people were impressed by what they saw at CES but they're forgetting about gameplay. I haven't seen a single game yet that says, this is why I must have a 3DO'

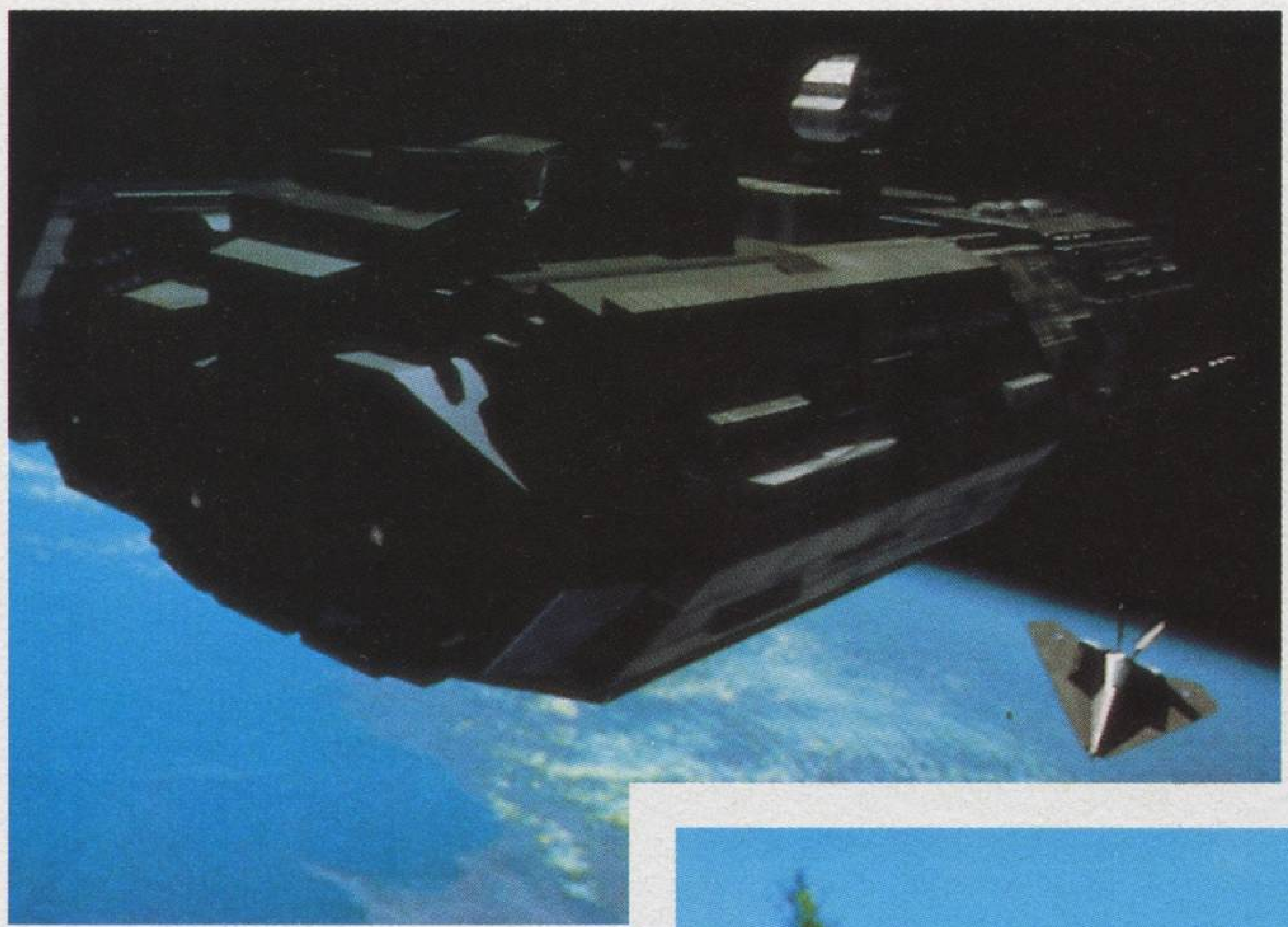
Bill Heineman, 3DO programmer, Interplay

one of the best technical support groups going.

On a different level, it looks like **Matsushita** could experience a few problems with its manufacturing supply of the 3DO units. Apparently a large Taiwanese



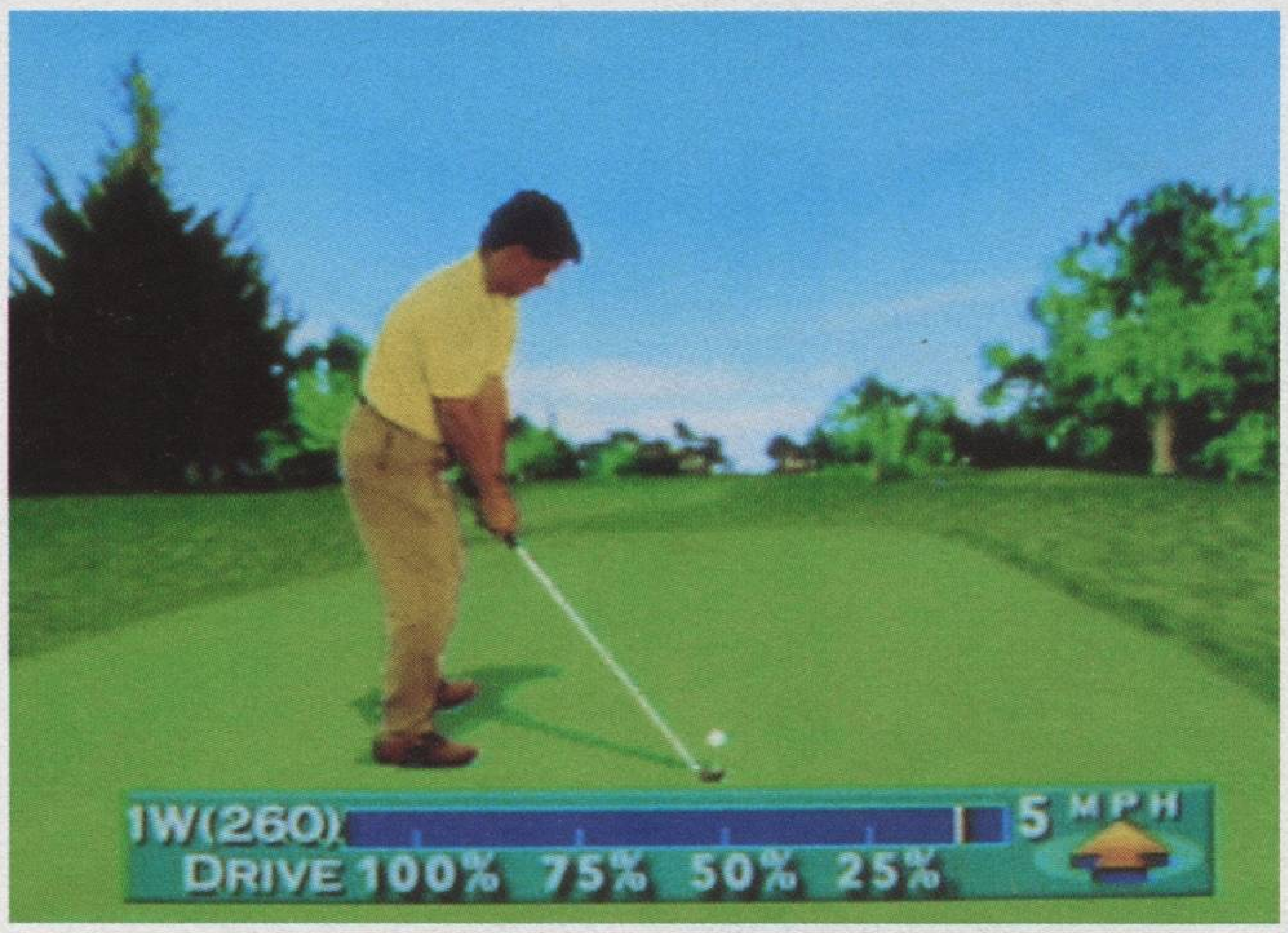
Some of the intro screens in ***Road Rash*** **are digitised in 24-bit colour for excellent results**



Shock Wave from EA. This mission-based space flight sim features some striking photorealistic images



Park Place Productions' excellent *John Madden Football* has been transferred onto 3DO by EA



One of EA's biggest-selling titles to be transferred from existing platforms is *PGA Tour Golf*. This one's likely to be a big seller on 3DO – even if it does look surprisingly like Philips' tedious golf game on CD-i

people, and not just our best people from other platforms.'

The biggest software publisher in the world isn't taking many risks with 3DO – half of their planned 3DO titles are already established on other formats. *PGA Tour Golf*, *Road Rash* and *John Madden Football* have all graced machines like the Mega Drive, PC, and Amiga, and their arrival on the 3DO will be used mainly as an instrument of comparison for weighing up the new technology against the old.

The 3DO version of *Road Rash* uses hi-res 24-bit art to set the scene for the game, and has preliminary graphics that look nice enough, if a little lacking in colour and detail. Huge buildings scroll past in a similar fashion to a Sega coin-op (though not nearly as smoothly), but some evidence of 3DO's power is certainly there.

What wasn't there in the version **Edge** looked at was decent sprite manipulation – the cars and bikes jerked around the screen rather unconvincingly.

The only other 3DO game **Edge** played at EA was *Shock Wave*, a 3D space shoot 'em up. It's entirely new, and uses photorealistic graphics and an excellent 3D texture-mapped terrain. Unfortunately, the price paid for such realistic graphics is high – you get a sloppy frame rate – and the only impressive bit in the game is the excellent Return Of The Jedi-style walkers that stomp around the screen.

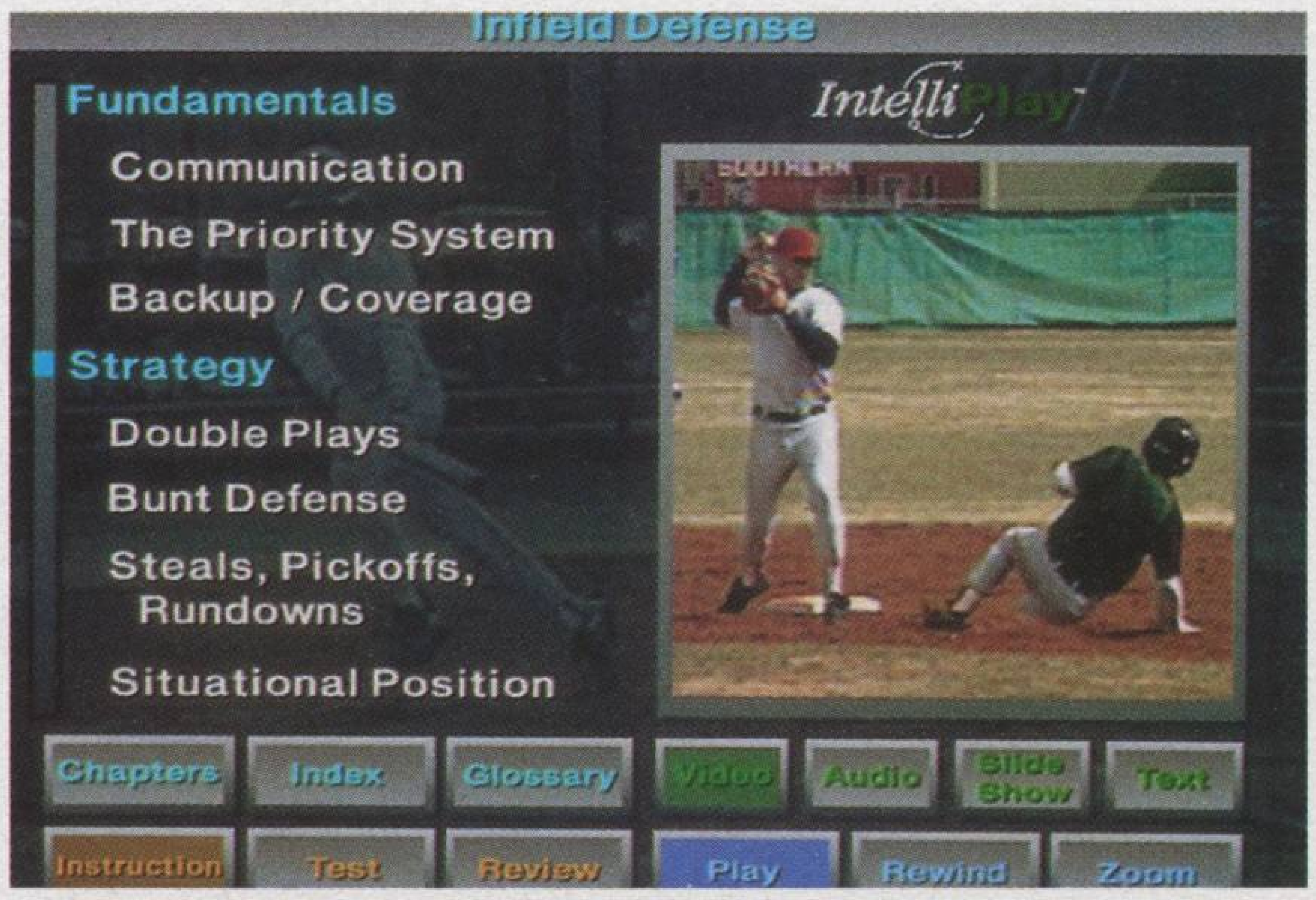
This one's not expected to appear until February at the earliest, so it looks like EA will be hedging its bets with one of its popular sports titles when the 3DO system actually appears in October. →

company that produces the glue used in a good chunk of the world's supply of RAM chips, burnt down recently, drastically cutting the supplyline of RAM chips to many large computer companies.

Despite Matsushita's status as the world's hugest consumer electronics company, people are suggesting the price of RAM might soar dramatically, possibly even affecting the retail price of Panasonic's machine, now budgeted for an extra megabyte of memory. Watch this space.

Dodging all of the development and manufacturing hiccups, suppose – just suppose 3DO does make October after all. Who are the first consumers to subscribe to this vision going to be? At $700, there's hardly going to be a stampede, and Trip Hawkins knows it. He sees the first 500,000 buyers as the early innovators, or pioneers of technological oneupmanship.

'Whenever you get a big jump in performance', says **Hawkins**, 'half a million people will buy it no matter what you do in terms of marketing and support. Look at the Atari ST,' he says, 'Atari did everything wrong and they still sold half a million. Look at the Commodore 64. It was seen at the time as a games machine. In 1993 dollars it cost well over $1,000 – and they *still* sold 15 million of them worldwide.'



Intellimedia's line-up of 'interactive' sports games use full-motion video. Wow, etc

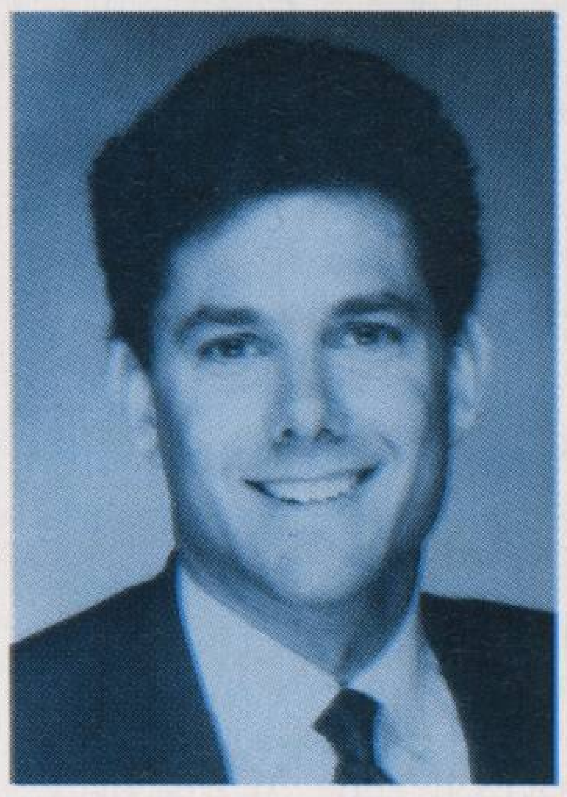
It's not encouraging, then, that early innovators were tempted into backing such unsuccessful concepts as Sony's excellent Betamax video standard (still the technology VCR

Continued next page

Crystal Dynamics



Photograph: Jez Black



Photograph: Crystal Dynamics



Photograph: Jez Black

Crystal Dynamics' HQ in Palo Alto, California (top) is now home to CEO Strauss Zelnick (bottom left), ex-president of Twentieth Century Fox. Pictured bottom right is Crystal Dynamic's Scott Steinburg (centre) with 3DO programmers Mark Cerny (left) and Eric Knopp (right)

No established games companies are bold enough to concentrate their efforts entirely on 3DO – but **Crystal Dynamics** – a Silicon valley start-up software company – is doing just that.

Considering Crystal Dynamics is so small and has yet to launch a single game, they're generating lots of interest. And it chiefly surrounds their new president, **Strauss Zelnick**, who now heads their team of 30 in-house 3DO game designers and programmers.

35 year-old Zelnick is the ex-president and chief of operations at **Twentieth Century Fox**'s film unit: he leaves behind him 1,200 employees and a division with annual revenue close to $2 billion. His previous salary was reputed to be $1 million a year.

For a fledgling company like Crystal Dynamics, this is a move of major significance, and it shows outsiders how seriously Hollywood is taking the $5 billion US games industry.

Quizzed about his move by the Wall Street Journal, Zelnick replied: 'I don't want to sound like I'm some trendsetter, but I know there will be others. There's just too much opportunity out there.'

Zelnick believes that the cutting edge of entertainment lies with new technologies like 3DO. And he's prepared to put his career on the line to prove it. As a further testament to this longterm commitment, Crystal Dynamics will be developing only for 3DO until other suitable (ie 32 or 64-bit) platforms appear.

But Zelnick also knows about the other side of the 'interactive entertainment' coin. His involvement with the interactive multimedia arm of Twentieth Century Fox left him cynical about the more grandiose Hollywood plans for interactive media. 'Storytelling isn't by nature interactive,' he says. 'It needs a teller and a listener, and the teller doesn't ask people, 'do you want the princess to die or not?''

Zelnick agrees that there's still much to be achieved with interactive games. The creative side of the games market is still 'at the stage of the Keystone Cops', he believes. Videogames need a 'vernacular', he argues, 'something that movies have had since the 1930s'.

But what does the future hold for one of Hollywood's youngest big-timers? Zelnick, ever confident, leaves the games industry with a challenge: 'We are looking for people to participate in what we believe will be a $20 billion entertainment business – it's going to be as big as the whole movie business worldwide.'

But how is such a small new company capable of making such a loud noise? And, more importantly, why is the industry taking notice?

Perhaps it has something to do with the company's chairman, **Dave Morse**,

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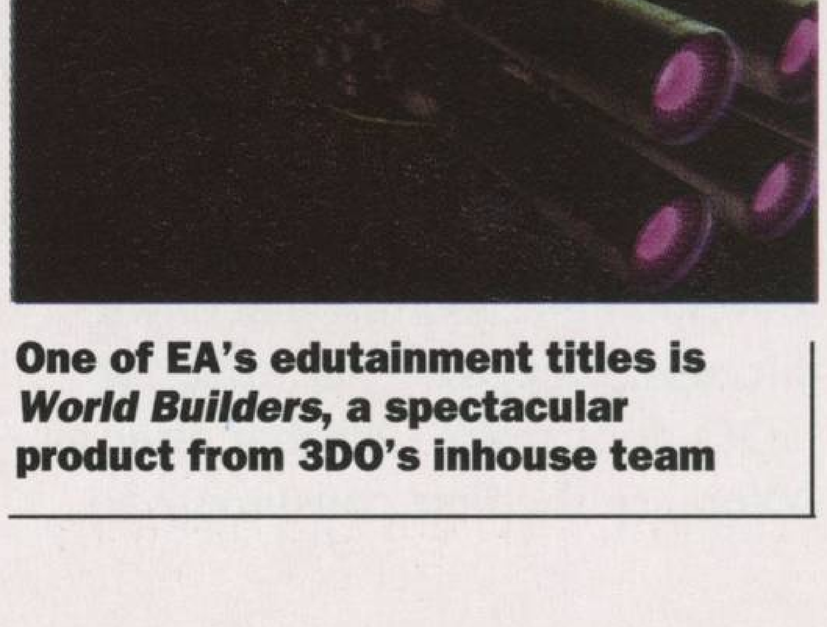


'What we're doing is damn near as good for a whole lot less money. They'll launch at about $700. I'm not interested in machines over $500'

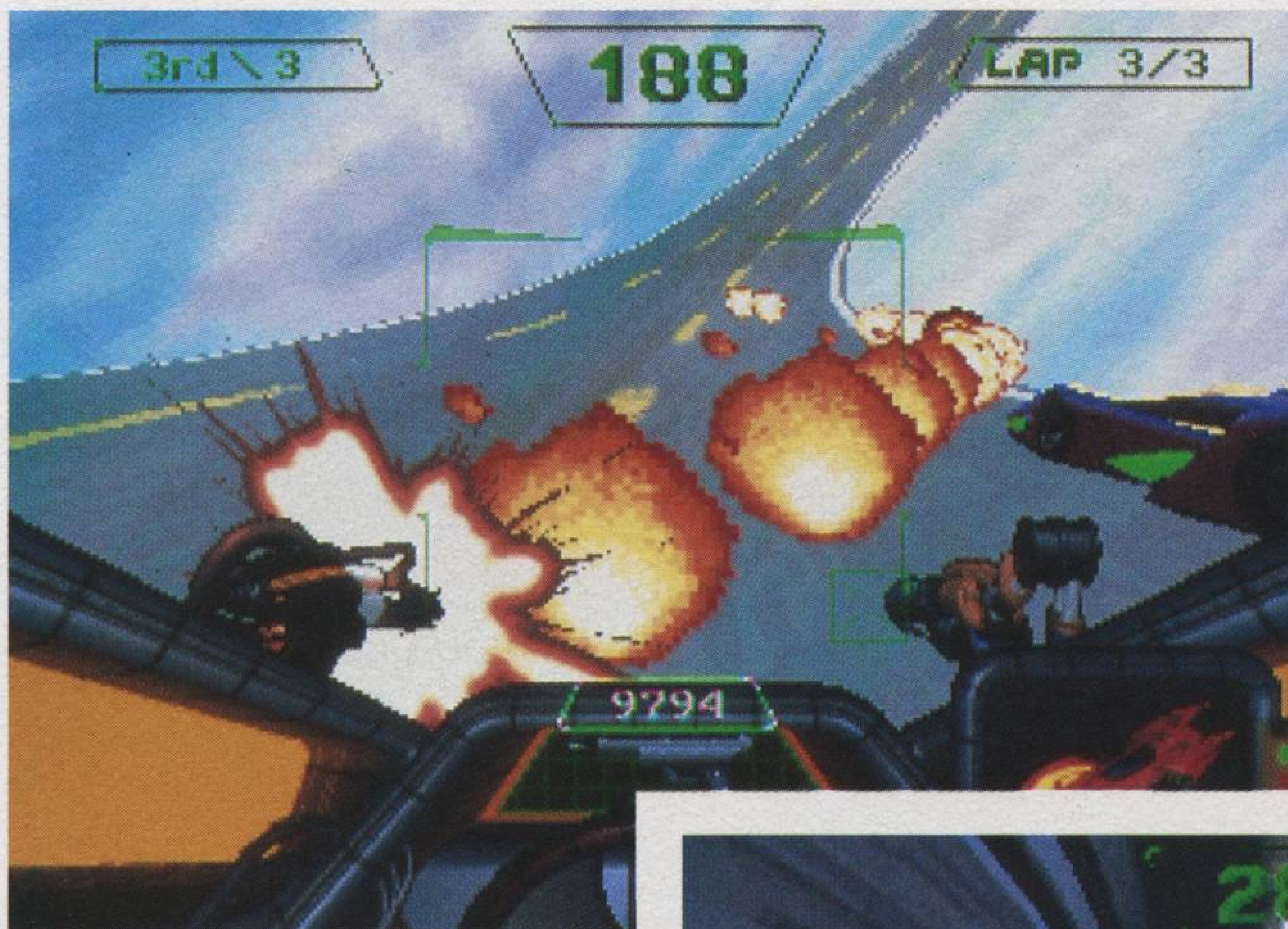
Tom Kalinske, President, Sega USA

should have adopted), and Laserdisc, which despite a recent revival, was always too expensive to be a mainstream alternative.

And naturally, its competitors are quick to suggest that the 3DO system is firmly planted in the same premium soil. Especially at $700.



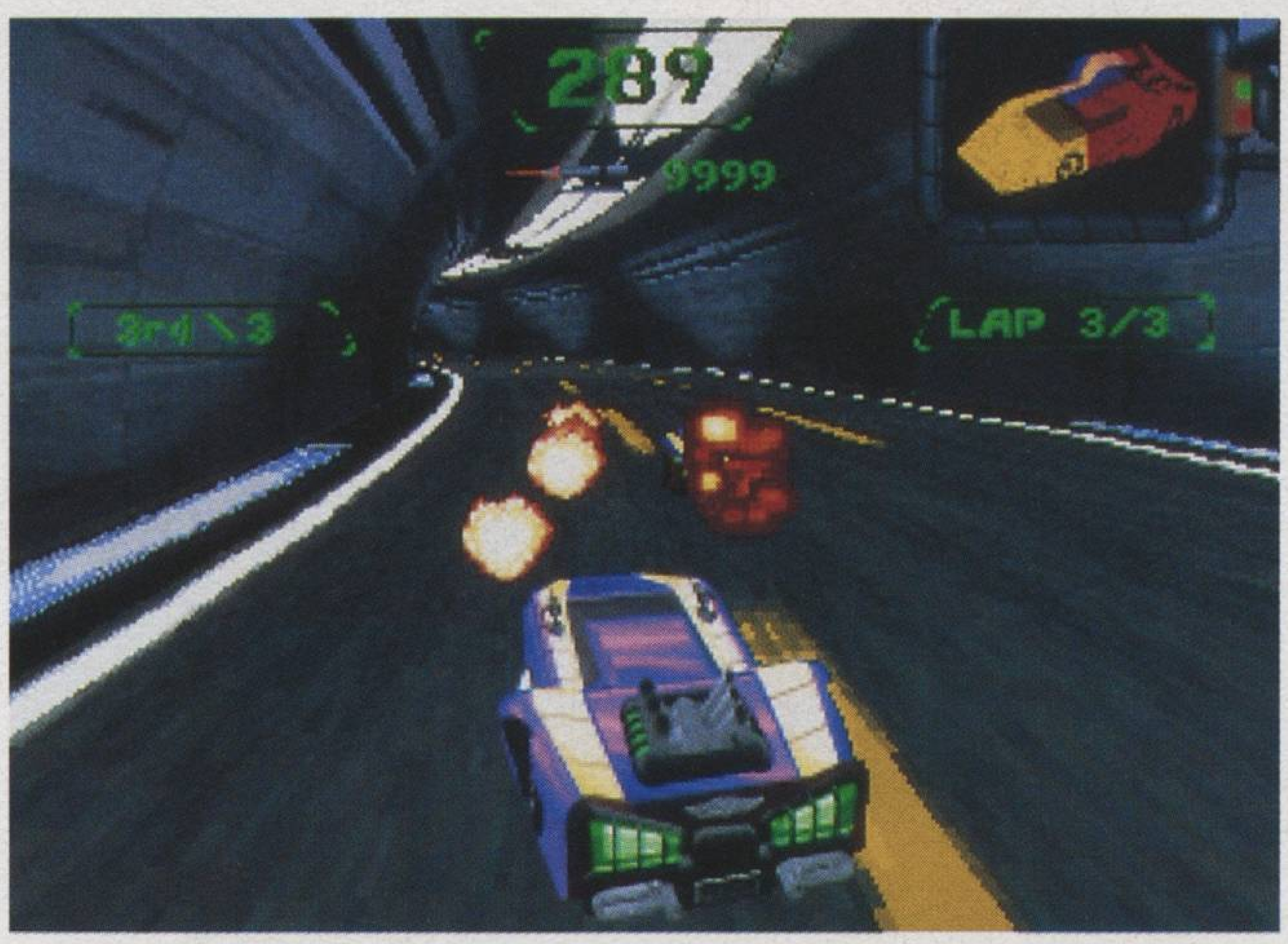
One of EA's edutainment titles is *World Builders*, a spectacular product from 3DO's inhouse team



Some of *Crash 'n' Burn*'s tracks are transparent and dip, twist and turn like a roller coaster. The sky moves in 3D too



When finished, *Crash 'n' Burn* will include multiple weapon systems and a racing circuit where cars can be upgraded



Crash 'n' Burn, Crystal Dynamic's first 3DO game, is an excellent showpiece for the new hardware. The scenery and scaling effects are impressive, if a tad jerky. Still, you can't have everything

ex-president of the **New Technologies Group** – the company that engineered 3DO hardware alongside **Electronic Arts**. Or the fact that they've also managed to recruit some top industry talent for both game design and marketing.

Realistically, it's probably got just as much to do with the fact that they out-performed other 3DO developers at the Summer CES by demonstrating the two best-looking 3DO games yet seen – *Crash 'n' Burn* and *Total Eclipse*.

Crystal Dynamics' **Scott Steinburg** explains, 'We're taking a Hollywood approach in our products and trying to incorporate lots of basic cinematography skills into our gameplay. The last thing we want to do is create games that are just a lot of window dressing – like *Night Trap* on the Sega CD.'

Window dressing or not, the company's first titles will be major catalysts for shifting 3DO systems. *Crash 'n' Burn*, a sort of kill-or-be-killed version of *Virtua Racing* with guns, missiles and explosions, will be Crystal's first game and will appear at the same time as the Panasonic 3DO unit itself.

It's basically a Mad Max-style racing game packed with impressive texture-mapped visuals, and with a choice of two perspectives – in and outside the car. There's none of that incredible *Virtua Racing*-style eye-in-the-sky stuff, but even 3DO has its limits.

Crash 'n' Burn is still a very impressive attempt at a fast action game, and includes a selection of exciting and diverse tracks. It also promises loads of new features to come.

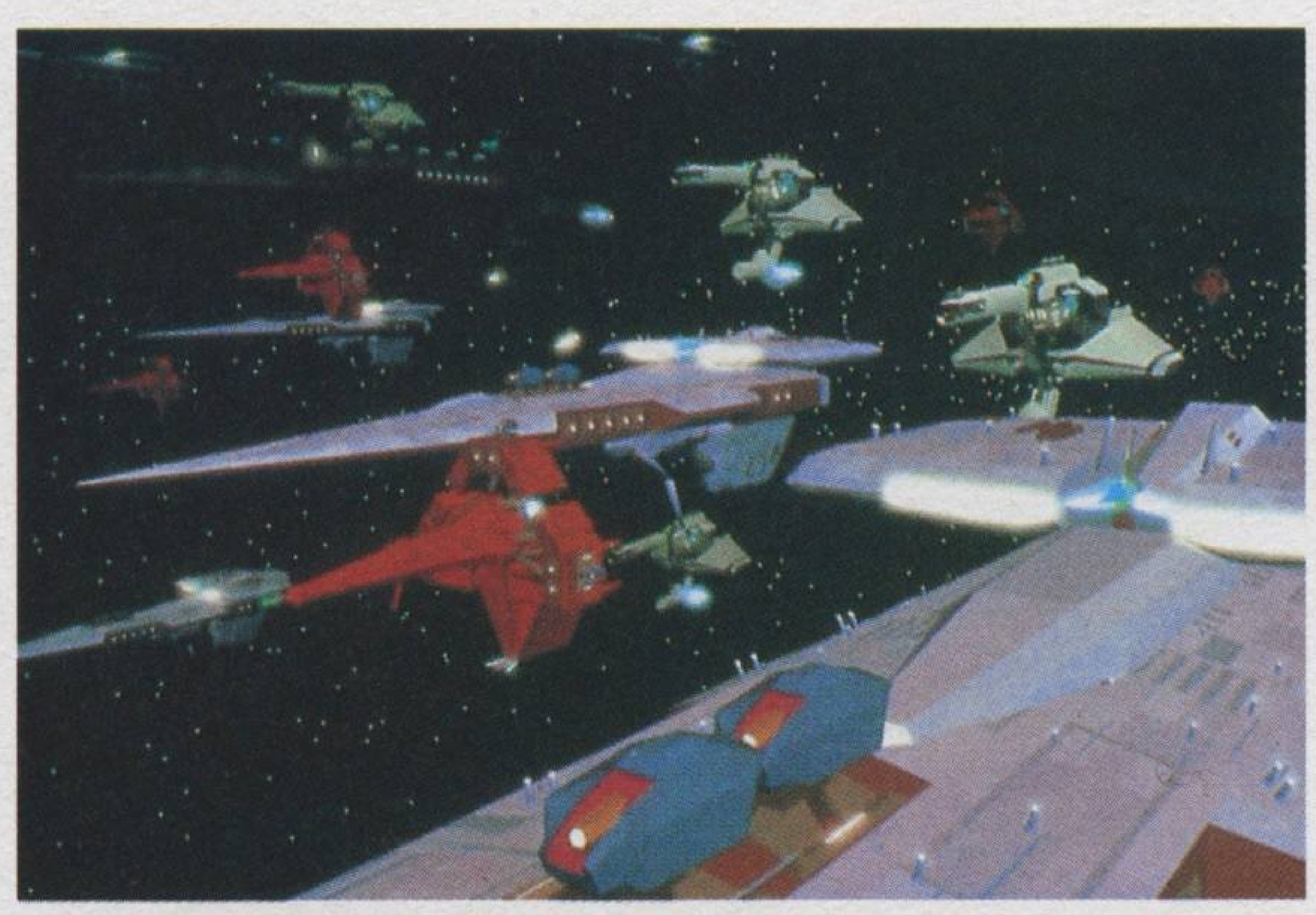
Total Eclipse is different. It's a space combat simulator and is even more impressive than *Crash 'n' Burn*. If you can →

'If Hawkins gets all 500,000 early innovators as he hopes to', says Nintendo's **Bill White**, 'that gives a market $^1/_{10}$th to $^1/_{20}$th the size of either Sega or Nintendo's installed base.'

Ah, but if 3DO's $500 target price materialises, and 3DO are saying it will when other manufacturers such as **Sanyo** and **AT&T** enter the market, then Bill will have to do some more sums. Oh, and he just might have to budge over a bit, too.

In total over 300 software companies, including talented development houses such as **Origin**, **Argonaut** and **Bullfrog**, have signed up to develop games for 3DO. And that's before a single 3DO machine has even been unboxed. So what lured them? Why was this one party they just couldn't afford to miss?

Well, the reasons are twofold. First, it is virtually free. Only a few hundred dollars, in fact, is all that it takes to become a 3DO developer. With such a small entrance fee, there's inevitably a lot of window shopping going on. Few companies are committing themselves straight away, and most will wait and see if the system really takes off before ploughing funds into game development. But the browsing isn't taking very long in some cases.



Namco Co Ltd, producer of 3D games like *Galaxian*^{3} (above), have signed for 3DO

'Many companies adopted a waitsee approach nine months to a year ago. One of the things we've noticed since then is that most didn't wait very long,' claims 3DO's

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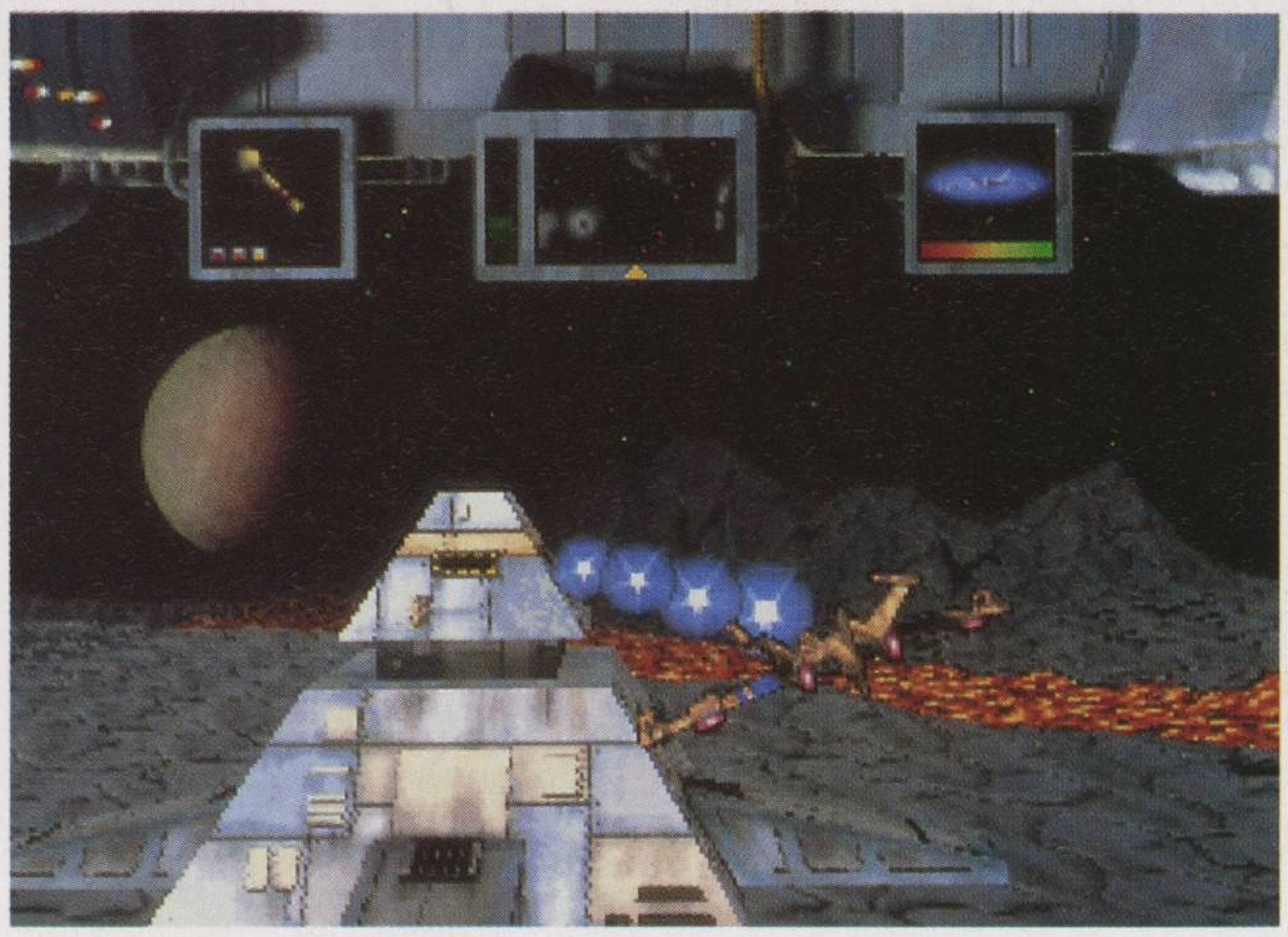
techview: **multimedia**



Total Eclipse's world rotates effortlessly around your ship. And it's so, so smooth



Both of Crystal's titles have a behind-the-ship viewpoint as well as an in-the-seat perspective



Imagine this running at over 20 frames per second and you'll get a good idea of how smooth and fast it really is. That lava flows, too

← imagine a version of Sega's *Galaxy Force II* with more freedom of movement and far more imaginative landscapes, then you'd be getting close. Again, there's a choice of viewpoints, this time similar to those in *Starfox*, and there are 20 different levels.

The main difference with *Total Eclipse* is the strangely sculptured terrain that looks very unusual and yet moves surprisingly smoothly.

It can even be rotated through 360˚ for a particularly stomach-churning effect. And all the 3D graphics have been speeded right up since they were first seen at the CES.

In fact, the texture-mapped graphics and 3D scaling in both games consistently shone brighter than the gameplay, which is something that seems to be keeping a very low profile at Crystal Dynamics.

Even in July, most of the programming at Crystal Dynamics was still concentrating on the way it all moves onscreen.

And given the tight deadlines they're working to, you can't help wondering just how much gameplay is going to make it into the finished games.

Programmers

for Crystal Dynamics Mark Cerny and Bill Willis both worked at Sega's Technical Institute in the United States, where they programmed *Sonic 2* on the Mega Drive alongside the original Japanese creator from Sega of Japan.

Mark even designed and programmed the brilliant *Marble Madness* coinop donkey's years ago for Atari.



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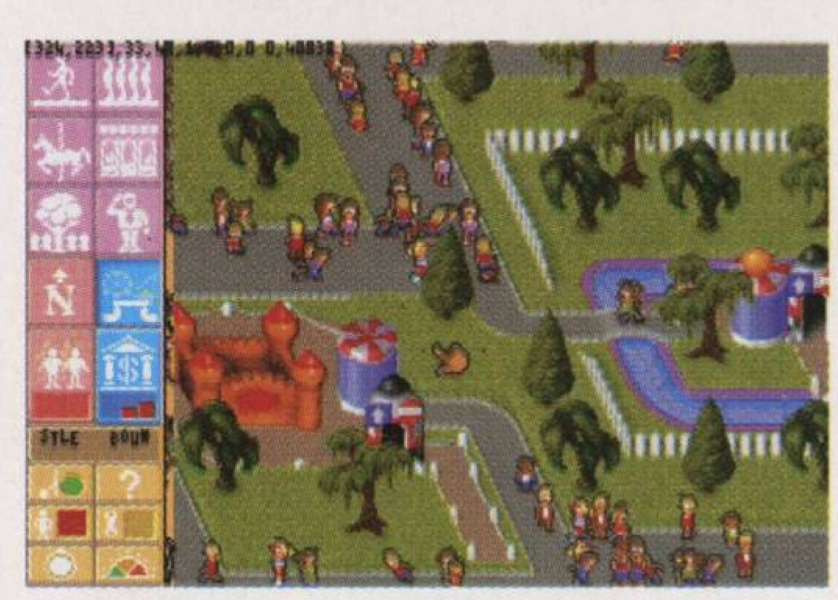


'I bet $10,000 that we generate more income from just one game – *Super Mario All Stars* – than 3DO get from all hardware and software sales this Christmas'

Peter Main, Vice President, Nintendo USA

Bill Duvall, 'certainly not once they'd seen the technology demos and some of the software in development.'

The second reason for 3DO's support is its approach to software regulation. There isn't any. Apart

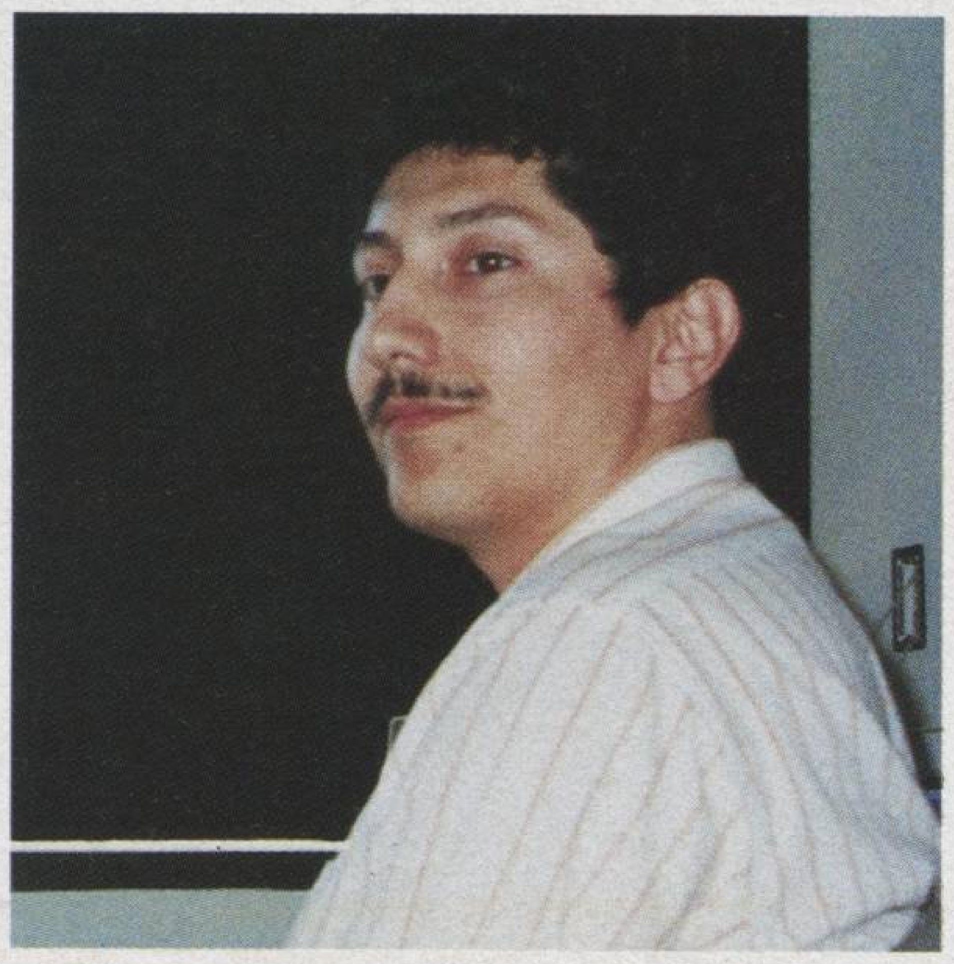


Bullfrog have three 3DO games in the pipeline. *Theme Park* allows you to create your own Alton Towers



Photograph: Jez Black

Above: Irvine, California is the home of Interplay Productions. Their offices are just a stone's throw from Virgin Games USA.



Photograph: Jez Black

Right: Game Designer Bill Heineman demonstrating *Out Of This World* on 3DO

Interplay

Interplay's first games on 3DO are going to be *Out Of This World* and *Battle Chess*. Interplay Programmer **Bill Heineman** told **Edge** about the system, and the changes he made to get *Out Of This World* onto 3DO.

Bill Heineman '*Out Of This World* will be out the same time as the 3DO system in October, so there wasn't time to change the gameplay. But it got a major facelift with the inclusion of new 32,000 colour backdrops.

'They were redrawn by a Hollywood company that specialises in creating background graphics for cartoons. They've added about 70 megabytes of graphics, and each backdrop is loaded from the CD as soon as you reach the edge of the screen. It's fast – it only takes half a second – but that delay still might mean putting some kind of compression on the images.

'The game window doesn't exist anymore either, so we've got a full screen display running at 60 frames a second the whole time. In fact, the machine's so damn fast at generating onscreen polygons that I have to use a speed governor to keep things in check. Without it, Lester would run across the whole screen in slightly less than a quarter of a second! Oh, and there'll be some proper music in the 3DO game, too.'

Edge But, apart from the speed, is the 3DO hardware everything it's cracked up to be?

BH 'Well, the cell engine is actually a derivative of what they did on the Atari Lynx. They've got a piece of hardware that can stretch, bend, rotate and draw an image and you don't have to write code for the machine to do this. But that's all it can do. It still requires everything to be drawn.

'For example, the Super Nintendo has Mode 7 where a background image can be rotated and scaled in hardware. All the developer has to do is write to about six or seven registers and instantly the video is altered. On 3DO I have to tell the machine how to draw an image, and then it physically has to draw it.

'The machine is fast enough (almost) to handle just about every effect of SNES Mode 7, but you could still do it all a lot faster on the SNES.



***Battle Chess* is being written on 3DO with the help of UK developers Krysalis**



Interplay have some fairly grandiose plans for 3DO games. *Stonekeep* perhaps?

'But then again, you'll see styles of game on 3DO that will blow away everything you've ever seen on other systems.'

Edge But do you think 3DO will really succeed?

BH 'The product they ship to the stores will almost certainly have flaws – possibly in the hardware, but mostly in software. I mean, →

from the necessary bit of quality assurance – making sure software works – 3DO will let publishers decide what gameplayers should and shouldn't see. And the number of games released, too.

This kind of approach has been well-received, naturally, especially in light of Nintendo's and Sega's restrictive practices. By creating an unprecedented 'level playing field' for publishers to enter the market, 3DO's plan falls neatly into place, with only software pricing remaining a tentative issue.

Trip Hawkins is determined to convince people that cheap software is more than just a possibility. 'That's the difference between a medium, which this is, and a business like videogames. In videogames, software is expensive, there are no returns, and the publisher is risk-averse. A medium is like the newspaper business; like television or magazines. The cost of manufacturing each individual unit of software is extremely low. So the end price to the consumer is trivial.'

But if anyone's expecting these kind of low, low prices at launch, they'd better wise up. The only way software companies will be able to sell titles for less than $30 or so, is if the 3DO system becomes a big worldwide standard, and 3DO games start selling millions of copies, instead of just thousands.



Magic Carpet* from Bullfrog – a sort of *Prince Of Persia* meets *Space Harrier

So for the first few hundred miles of this journey, at least, development costs will be very high, returns will be low, and games are unlikely to come in at

Continued next page

techview: multimedia



In 3DO *Out Of This World*, foreground soldiers scroll past with no loss of speed



The speed of the animation in *OOTW* is faster than on the SNES



***Out Of This World* on 3DO looks gorgeous and promises to sound even better. Those 32,000 colours really make a huge difference**

I've found hardware problems that *they* didn't even know about, which means there's a slim chance that they won't be fixed even in the final version of the 3DO hardware.

'The main thing 3DO has going for it is the number of developers that they've managed to get signed up. This just about guarantees success.

'But I can tell you right now, out of that long list, only about 20 companies are currently developing software. The rest are waiting to see what happens. If it doesn't take off, these companies only lose the licence fee: a few hundred dollars.

'Besides, if 3DO make their October deadline it will be a miracle. For the system to ship in September, they should be manufacturing 3DOs now, and you can't manufacture something that simply isn't finished.

'The guys at 3DO are trying hard to give developers what they want, but what they're doing is a little too ambitious in my opinion. They should have scaled things down to get the system out this soon.'

Edge If it ships in October, should people pay $700 for it?

BH 'Ask me that question next year. When it first ships, 3DO will be lucky to have anything more than three or four games that are ready for any kind of serious gamesplayer.

'A lot of people were impressed by what they saw at the CES, but they are forgetting about gameplay. And I haven't seen a single game yet that says, this is why I have a 3DO.'

With these two games, Interplay are testing the water before committing themselves fully to 3DO. Whether their impressive roleplaying game *Stonekeep* will appear hasn't been confirmed, but if the PC version is anything to go by, it should be a likely candidate.

Continued



much less than we're used to.

But you've got to hand it to 3DO. Besides the impressive product and the unrivalled software support, they've so many heavy-weight believers in this pre-cooked bundle of promises that it's hard to see how it can fail.

Gamesplayers want the jump in performance, the industry needs a standard, and software companies need a mainstream platform that isn't restrictive to publish for. But there are two things that may yet spoil the party.



3DO's in-house development team are currently transferring *Jurassic Park* to 3DO for MCA

● **Expectations** Remember when the Amiga replaced the Commodore 64 back in the late eighties? The tenfold jump in performance, though major by existing standards, wasn't enough to handle the colour graphics at the same speed as on the C64. And much of the software was a letdown because programmers were taking on too much.

3DO's hugely powerful and you'll see some stunning games for sure, but unless programmers scale their ideas down, gamesplayers are going to be bitterly disappointed by the trade-off in speed…

● **Interaction** … And they're going to be even more disappointed by the lack of interactivity. 3DO may offer enhanced graphics and more realistic playing environments, but game design could be dire. Interactive movies are tedious; gameplay sucks. 3DO designers and programmers must look to involve people, not merely entertain them.

Can Trip turn his 3DO dream into three-dimensional reality?

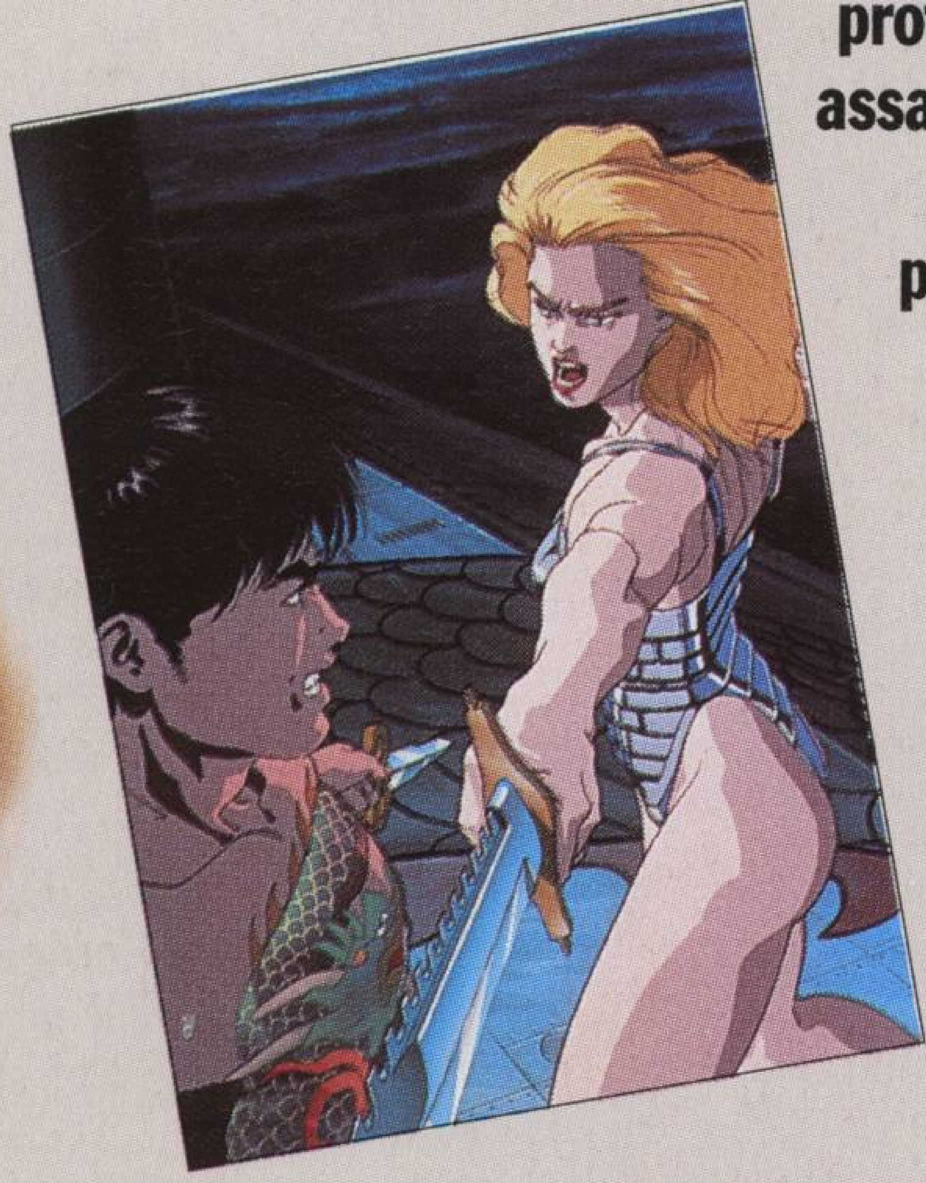
Stay with **Edge** and see.

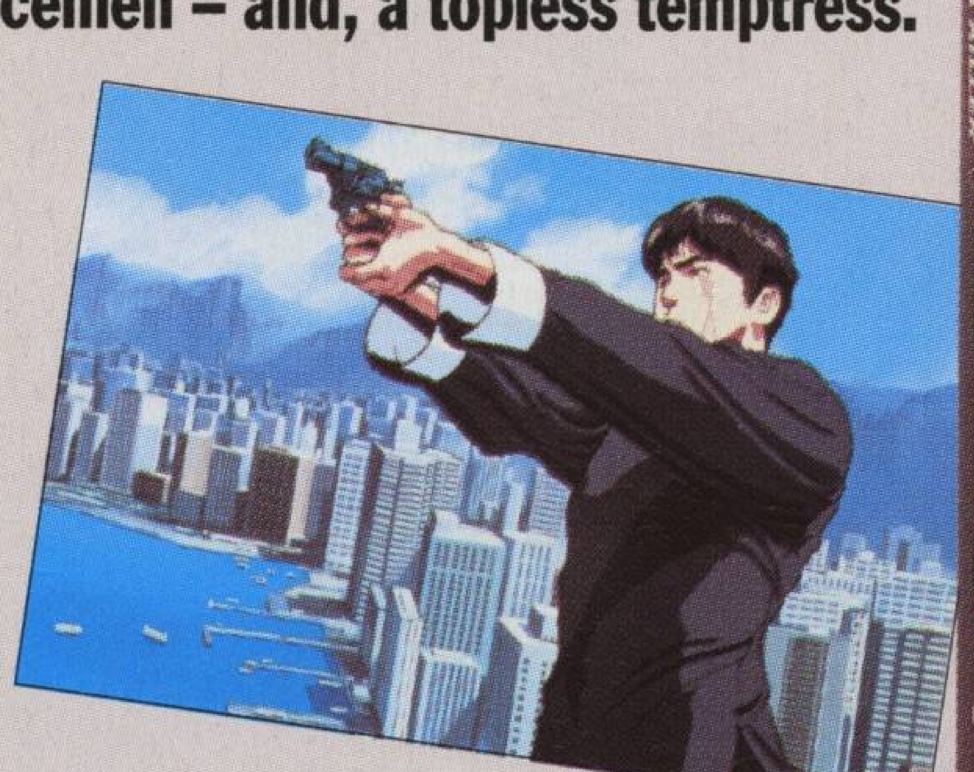


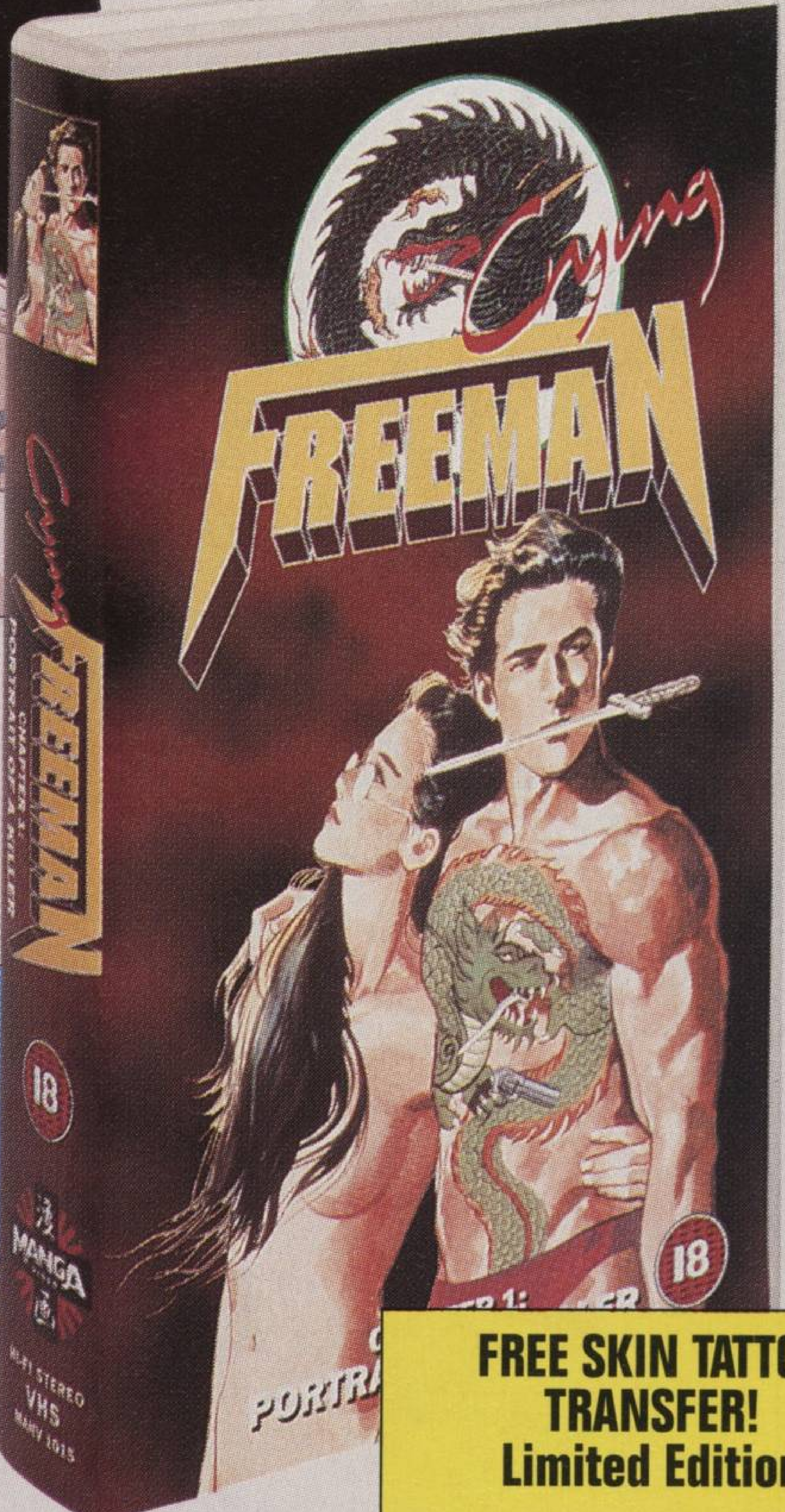
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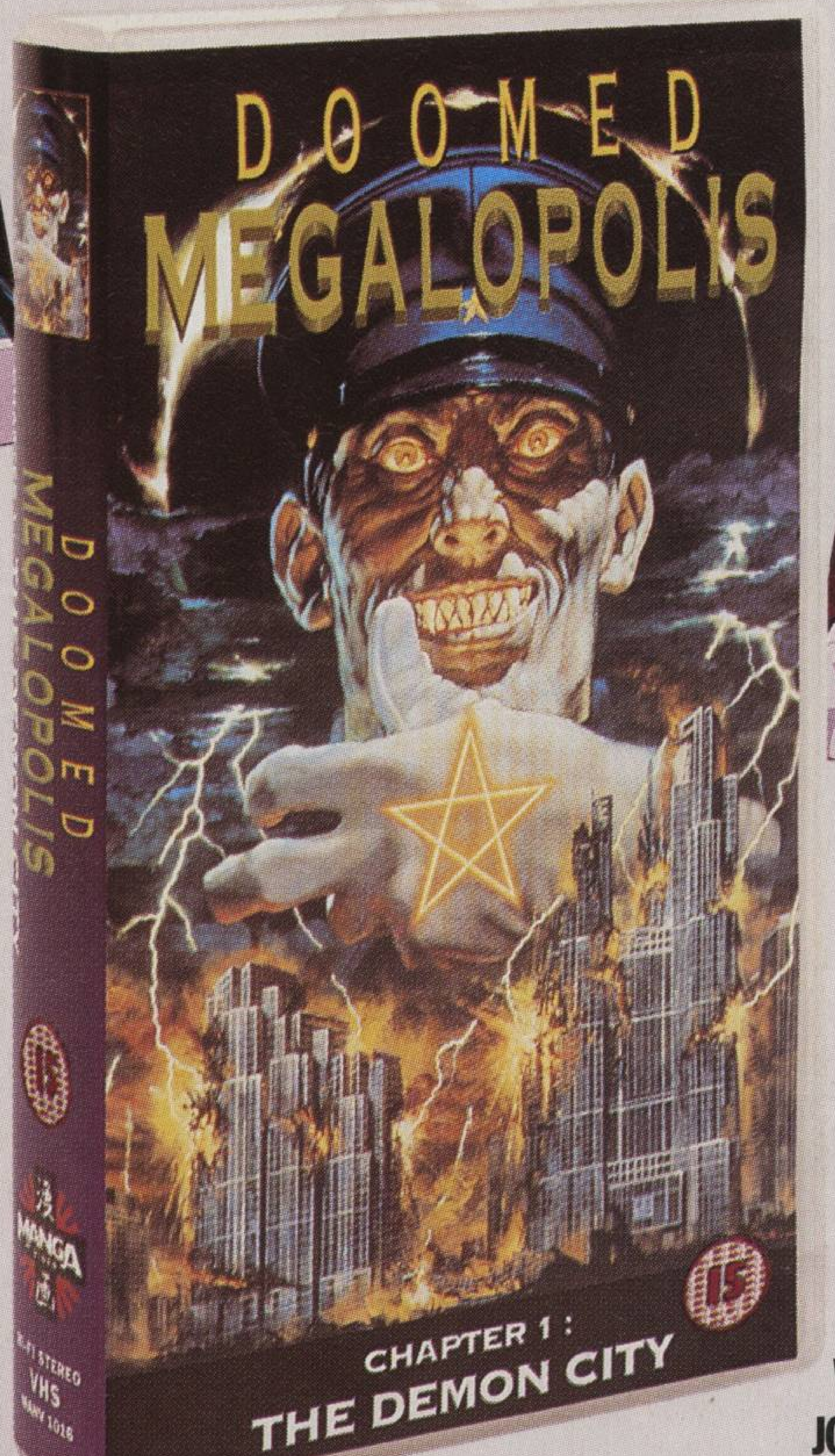


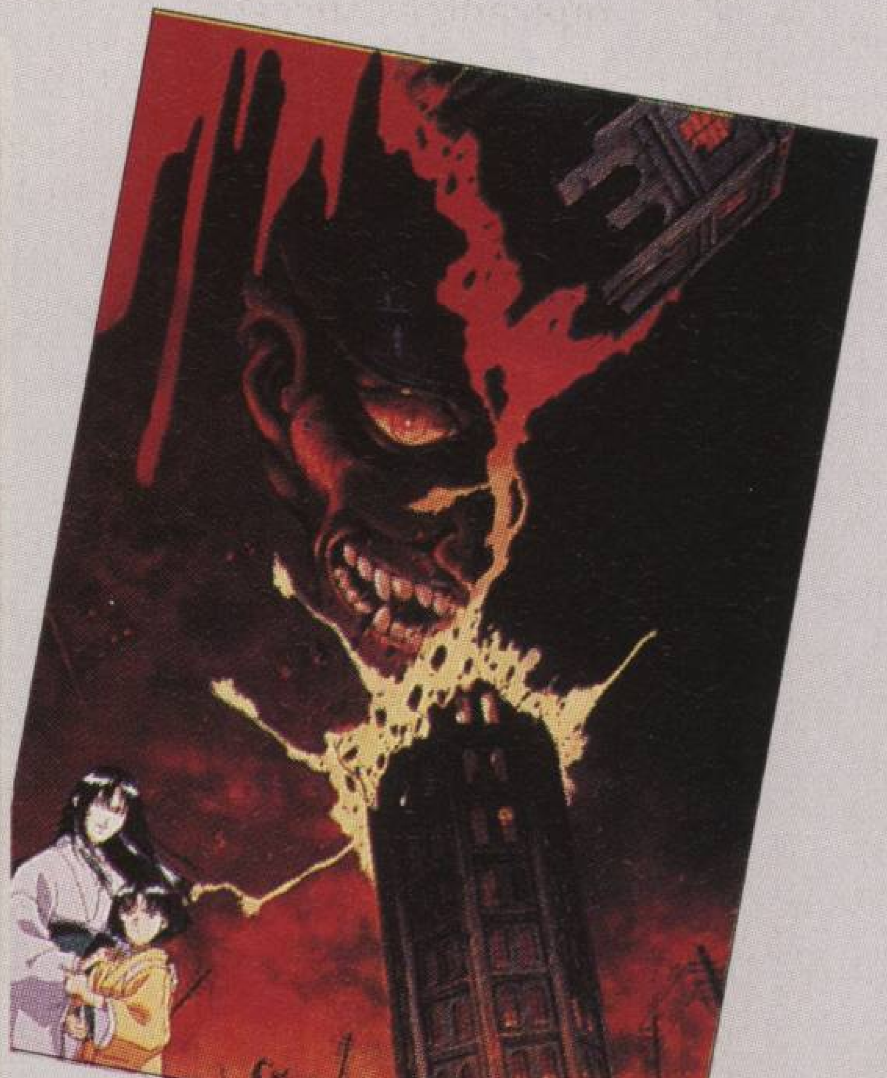
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漫 MANGA VIDEO 画

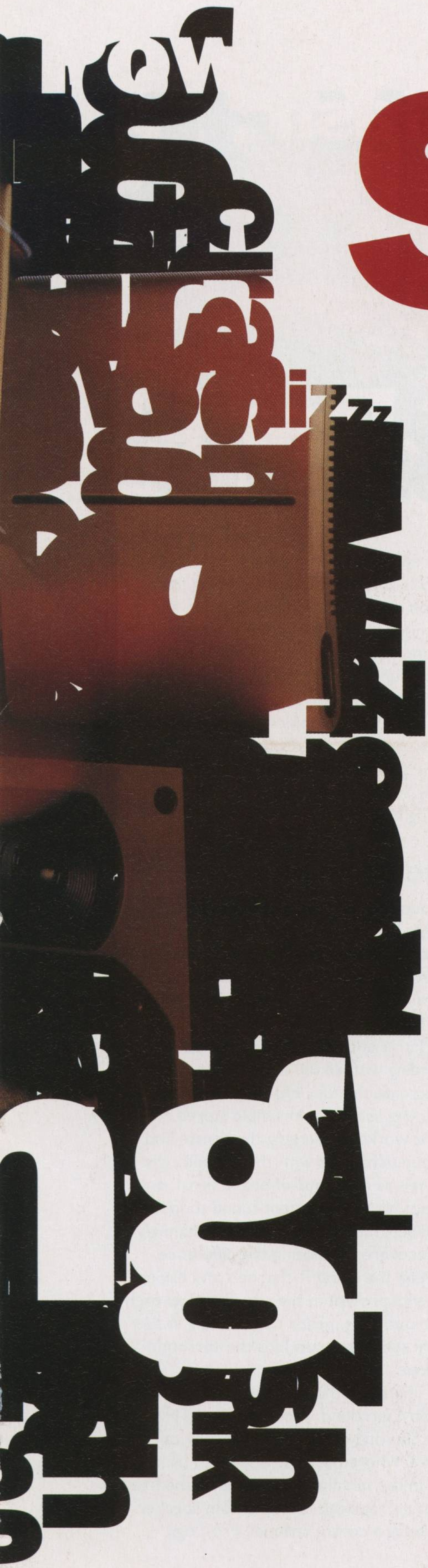
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techview: sound



Photograph: Peter Canning



Sound scape

Sound is often a forgotten factor in the gaming experience. But Dolby Surround and QSound are about to change all that; **Edge** immerses itself in the sounds of the future

Sound is just the icing on the cake for many games – but it's about to get a whole lot sweeter. Dolby Surround gives you real cinema-quality 3D sound, and is fast carving a path into the videogame world. From older releases like *Super Darius* on the PC Engine CD-ROM to newies like *Super Turrican* and *King Arthur's World* on the Super NES, Dolby Surround is setting the tone for the next generation of game sound technology.

But it doesn't end there – other manufacturers are already coding up their own Dolby Surround games, and Sega has backed another sound imaging system, QSound, which it will include in some of its big releases for the Mega CD.

Dolby Surround gives real cinema-quality 3D sound, and is fast carving a path into the videogame world

Dolby Surround doesn't just give you 'good quality' or 'too darn loud' stereo sound, but the real 3D 'look out behind you' effect of cinema sound. Cinema sound is multichannel – beyond mere stereo – with one speaker either side of the screen, one under it, and a pair of effects speakers behind you; it means being able to place the sound anywhere in the room. It's a natural for computer games, as the only thing missing from modern game systems is the really big sound you get from TV or movies.

Imagine a game where you can't see an object

Continued next page

techview: sound

Jez **San**
Argonaut Software



Photograph: Rob Scott

Jez San: founder and MD of Argonaut Software in the UK



***King Arthur's World* on the SNES uses Dolby Surround for effects like thunder**

Argonaut Software is a leading UK software house, famous for many reasons, among them its commitment to 3D – 3D games, 3D chips for videogames, and now 3D sound. The company was started by then-schoolboy **Jez San** just over 11 years ago. He talks to **Edge** about the sound of things to come at Argonaut.

Edge What does Dolby Surround add to *King Arthur's World*?

JS 'In *King Arthur's World* you can pull up a sound menu and play effects, with some coming from the rear and some from the front, depending on what sounds they are. Like explosions and thunder and people falling, that kind of stuff is in Surround, and then some things like swordfight clashes come from the front, because they're on the screen. The nicest thing is the fanfare when you press reset – the first thing it plays when it says *King Arthur's World* presented in Dolby Surround – it plays a chord and it spins it around the room; it gradually pans it to the rear speaker and then back to the front again all around you.'

Edge How far is Argonaut going to go with Dolby Surround?

JS 'We're doing more Surround sound stuff in all our future games. Now that we know how to do it, it doesn't take that much time to add it, so we might as well do it for every product. We've done some games for THQ – we're doing a version of *Ren & Stimpy* for them on the SNES, and that will have it... and we have some other products as well.'

Edge What about putting Surround in a game like *Starfox*?

JS 'I think that would be a good game to use it in – it's best for anything where you want things happening behind you...'

Edge Like where you get overtaken by the first end-of-level guardian?

JS 'Exactly, because you would hear it coming from behind you before it gets to the front. It would actually help the gameplayer out because you'd get an audio cue as to which direction the enemy was coming from, which you couldn't get with a simple stereo setup.'

Edge What are the other benefits of Surround sound for gamesplayers?

JS 'Well, one big advantage if you've got a full Dolby Pro-Logic setup, is that it is very good for all CD games, because you can get the vocal track to come from the centre speaker, which gives you much more intelligible speech than if you have the speech coming out of only one speaker and the music coming out of all the others. It just makes everything in the game a lot easier to understand. In CD games where you have a lot of speech, that's a really good move.'

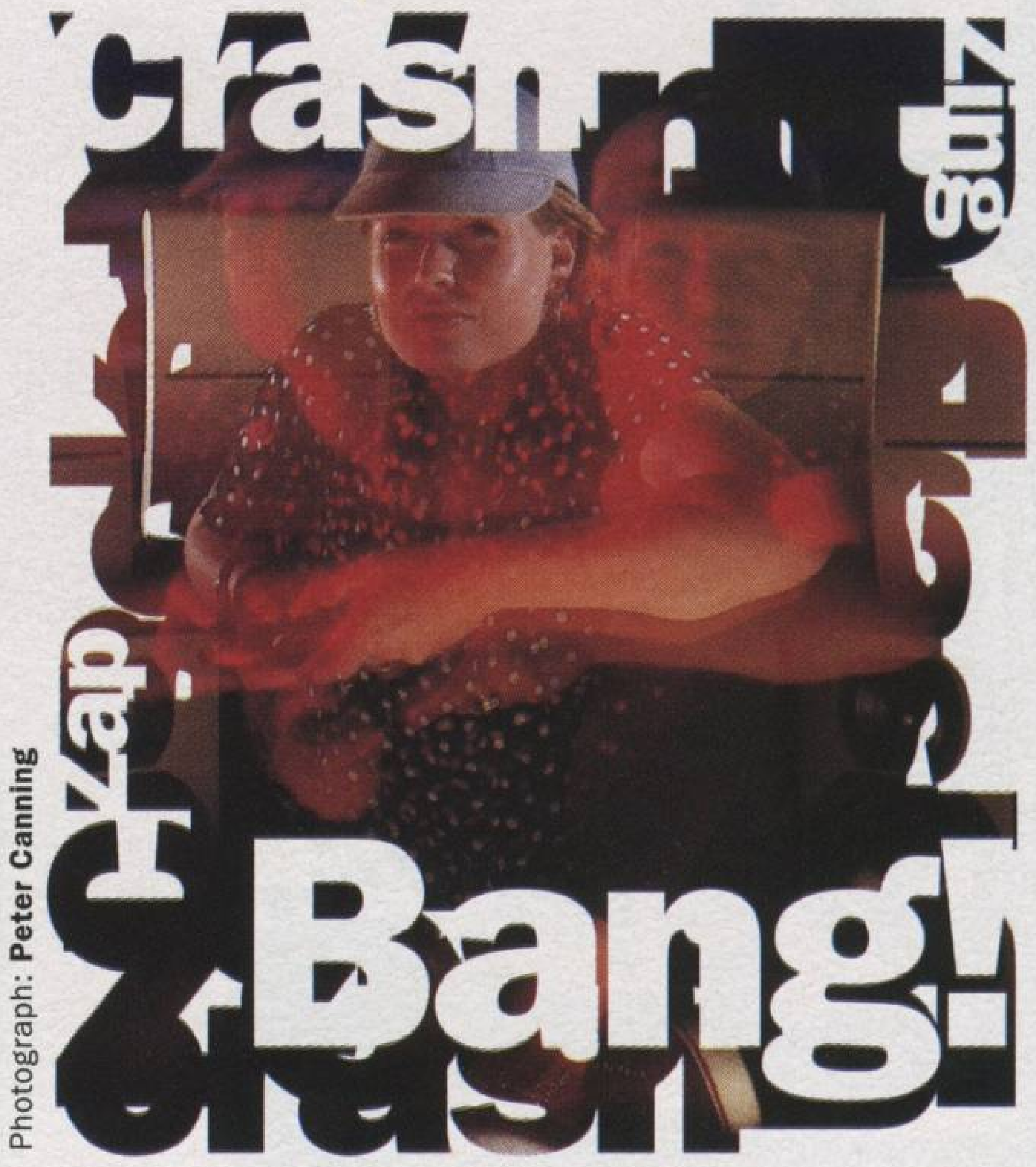
King Arthur's World runs on the SNES and gives you power over King Arthur and his knights in their battle against evil.

After the opening fanfare, the Surround effects are generally quite subtle: thunder rumbles in the distance far behind you and flying arrows swish around your head.

At first sight, it looks a lot like *Lemmings* and there's a high degree of problem-solving and trap-crossing to be completed. Utilising the different skills of each character in the right place, you slay the monsters that you meet, you defuse the traps and finally bust into each castle so that King Arthur can kill the chief villain on that level.

There are 27 levels and the challenge isn't so much in defeating the end-of-level bad guys, as in reaching them without getting killed. Sadly, the game isn't very hard and is soon completed.

Continued



Photograph: Peter Canning

onscreen, but like in real life you can hear it faintly and tell where it's coming from. Fire off a shot in the right direction and you might hit it; wait until it's in front of you and you might be dead. As missiles leave your ship and scream off the screen, you hear them until they're out of range.

Sound, like graphics, can be used as a tool to increase the depth of the gameplay, and judging by the earliest examples of Dolby Surround, it's the way things will be moving in future.

The principles behind Surround sound aren't too complex. Dolby's big trick is that it has figured out a way of cramming the four tracks needed for Dolby Stereo (left, right, centre and surround) into two – creating the Dolby 4:2 Matrix system. Out the other end of the Matrix encoder comes a stereo recording with all the information required to recreate the four channels of sound, but remaining listenable in simple stereo.

It works by merging the centre and surround channels with the left and right channels as a 90° out-of-phase signal, only perceptible to equipment tuned to look for it and separate it out. The extra channels are recovered by noting the difference between the L and R channels and having elements present in the signals cancel each other out. This means that nothing in the centre speakers leaks into the surround speakers, and vice versa.

There are three basic types of system – Dolby Surround, Pro-Logic, and THX. Basic Surround units are what they call passive, where the centre speaker usually used in the middle of the setup at the front is absent, replaced by a phantom speaker simulating a centre channel. Pro-Logic

QSound is a major part of *Jurassic Park*: a footfall to the left means that right is a good direction to head

systems are active, meaning that they constantly sense and enhance the dominant channel of the five or six speakers you can connect. Both systems produce the Dolby Surround effect, and envelope you in the sound, although Pro-Logic systems are better as they have a special steering mechanism to ensure better separation and therefore much more sharply focused 3D sound. THX units, which are approved by Lucasfilm, are just coming out now and although they employ basically the same system as the other two, they are technically leagues ahead – and cost more.

But there's more than just Dolby Surround out there at the moment. Sega's choice of sound system is called QSound and you'll hear it in several upcoming releases for the Mega CD. You'll soon be able to immerse yourself in the ambient aurals of *Ecco The Dolphin* and, of course, this year's big smash *Jurassic Park*, due for release this summer. Sound is a major part of *Jurassic Park*: the dinosaurs tramp around you in full QSound – so when you hear a footfall to the left, you'll know that right is a good direction to head.

It's not yet known for sure if QSound technology can be incorporated into game cartridges, and hardware restrictions on carts are currently fairly limiting for full sound imaging. Anyway, it's much easier to use QSound on CD, as it was originally designed for use in studio recording.

When QSound was first developed, by Archer Communications of Canada, they offered it to Nintendo for videogame use, but Nintendo rejected it because they didn't think it was good enough. Others weren't as picky: QSound now features heavily in Capcom's arcade games, and Sega has licensed it. Other firms like Philips (with its CD-i system) have also shown an

Continued next page

Chris **Hülsbeck**
Audios Entertainment



Photograph courtesy: Audios Entertainment

Chris Hülsbeck: the man behind the music in *Turrican*



SNES *Super Turrican* employs Dolby Surround for some brilliant spatial effects

Chris Hülsbeck is the 25 year-old German musician responsible for the great Surround sound included in *Super Turrican* on the Super NES. Since the early days of the C64, Chris has moulded a career producing game music for a variety of home computers and consoles, and has earned one of the best reputations in the industry, producing high quality music and effects in Amiga games like *Turrican I* and *II*, and *Apidya*.

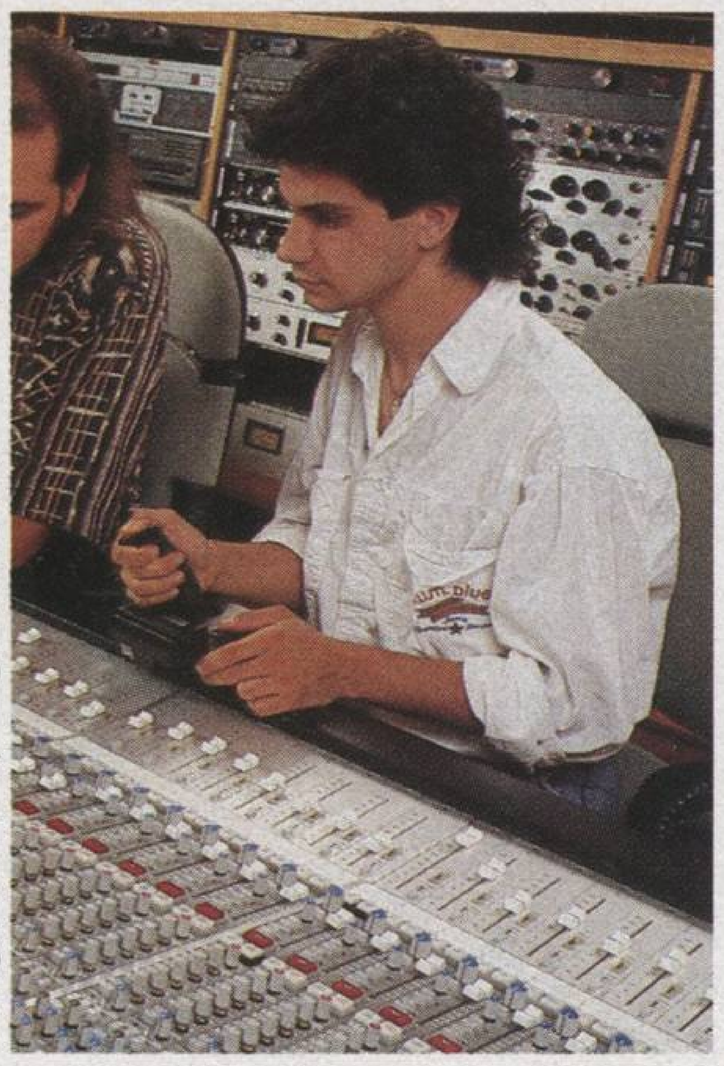
In fact, the music has been so popular in these titles that Chris was encouraged to release music CDs incorporating the soundtracks. To date, they've sold around 15,000 copies in Germany alone. (To find out more, call: 010 49 (610) 352365.)

Edge talked to Chris about *Super Turrican*, Dolby Surround and the possibilities for sound in games.

Edge Why did you decide to use Dolby Surround in *Super Turrican*?
CH 'We knew how Surround sound worked a long time before starting the *Super Turrican* project, and the possibility of including this process arose from my work on the Super NES sound hardware. Because I was working with such a small amount of memory I thought it would be a great idea to enhance the music and effects with Surround sound. And it's been very well received.'
Edge How easy is it to create the effect on the SNES?
CH 'It's not as tricky as you might think, but we sold our souls to get the reference material for the SNES so I can't reveal any technical details at this stage. However, the Dolby Surround sound signal is encoded in stereo so you can't hear it on a mono amplifier or monitor. That's the reason the game offers mono mode in the menu.'
Edge What restrictions did a four megabit cartridge place on the sound quality in *Super Turrican*?
CH: 'Out of the cart's tiny 512K memory, only 128K is used for sound. This is about the same as the memory used by two of the 20+ *Apidya* soundtracks on the Amiga. The sound quality suffers on *Super Turrican* as a result; I could have achieved much more with extra memory.'
Edge Can surround sound be done on other machines such as the Mega Drive, Amiga or PC?
CH 'On the Mega Drive the technique can't be used systematically, but my sound decoder often moves around FM sounds in the background so I'm searching for a way to control it. On the Amiga it is actually possible but it takes over two of the four channels just for one sound, so I won't be using it very often. On the PC it is possible with the right sound card – the only one that can do it at a reasonable price is the Gravis Ultrasound card, and we are already working on a complex sound driver that will support it.'
Edge What projects have you been working on recently?
CH 'I spent a week converting Core's *Jaguar XJ220* soundtracks onto the SNES working in 256K, based on the game being an eight meg cart. Unfortunately, after I finished them, the game's ROM had to be halved to four megabits so I had to redo them all in 128K. Now that's over I'm working on the music for *Super Turrican II*, which will give me much more space to play around with since it's currently scheduled for a 12 meg cart. I'm also planning my next CD release, which will be a collection of music from both *Super Turrican* and the all-new *Mega Turrican* on the Mega Drive.'

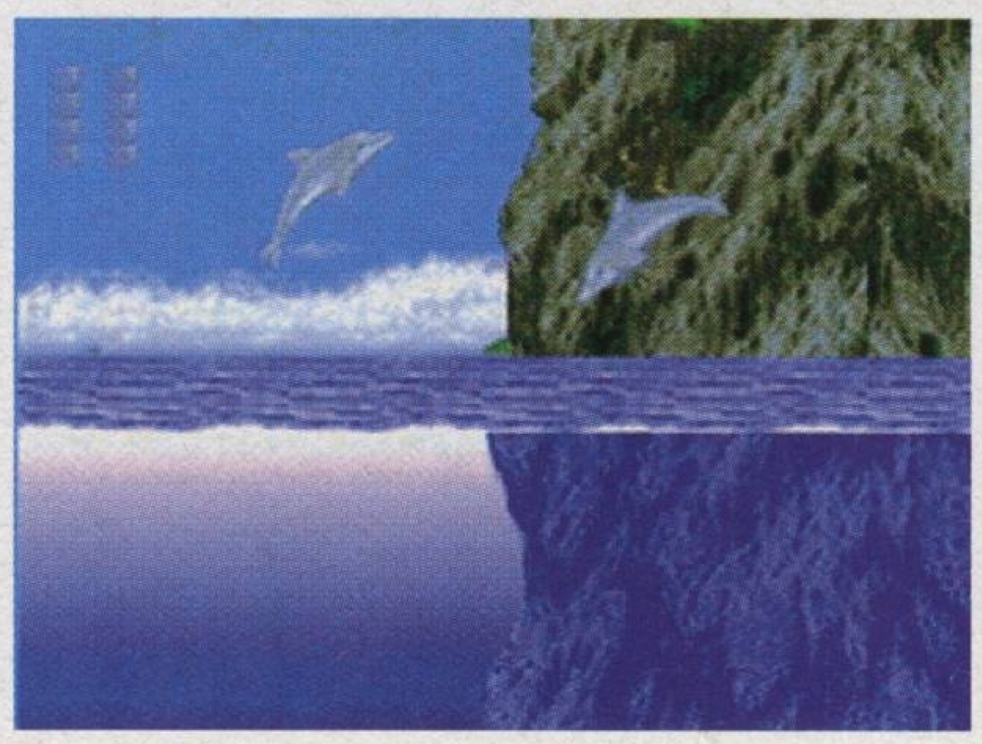
techview: sound

Tommy Tallarico
Virgin Games USA



Photograph courtesy: Virgin Games USA

Tommy Tallarico: cutting tracks in QSound for Virgin



***Ecco The Dolphin* – the first Mega CD release to get a QSound music track**

So what about QSound? Does the technology exist in the games market to take advantage of this revolutionary sound system? Companies like Capcom and Sega obviously think so.

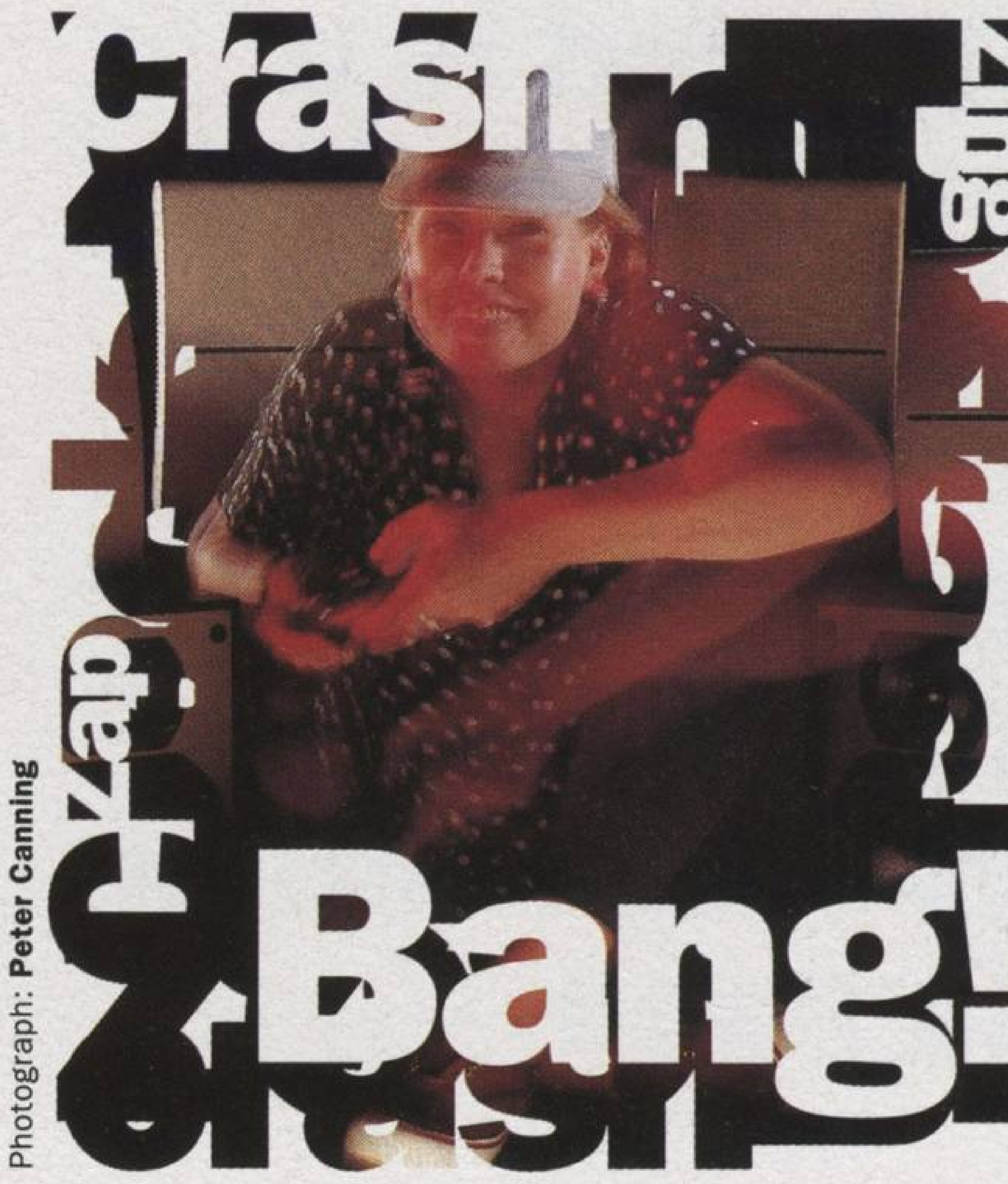
While CD naturally provides greater scope for producing the effect, chip generated QSound can be heard in Capcom's newer arcade games like *Street Fighter Turbo*, and *Cadillacs And Dinosaurs*. There's a far greater depth to the music and sound effects and, of course, the natural positioning of the player between the cabinet speakers is perfect for the effect to work.

Sega is approaching things from a different angle by incorporating QSound in many of its forthcoming Mega CD games. *Ecco The Dolphin* is the first game to take advantage of the process, and while in danger of being criticised as yet another rehashed CD release with no noticeable differences from the cartridge version, it's at least doing something different in the sound department.

Archer Communications, the company responsible for the development of QSound, is partly owned by Capcom. Besides Capcom, Virgin Games of Irvine, California, claims to be the first games company to have signed a deal with them for use of QSound in videogames. **Edge** spoke to **Tommy Tallarico**, head musician at Virgin Games USA.

Edge Why did Virgin Games decide to invest in QSound?
TT 'To be honest, the reasons largely stem from my loathing of conventional videogame music. One of the things I've attempted to do here at Virgin is change the way people hear and the way they feel about videogame music, by giving players the kind of music in their games that they'd like to listen to normally. QSound simply adds another dimension and allows for more variety in videogame sound.'
Edge What's your first QSound project?
TT '*Terminator CD* for the Sega CD is the first Virgin game to make use of QSound. To fit in with feel of the license, I went for hard rock stuff, rather like Van Halen without lyrics, in fact. All the music was recorded dry at first. That is, without reverbs or digital delays, and then I went to an A&M studio in Hollywood to mix down the whole set of tracks in QSound, in exactly the same way that it was be done for the QSound albums by Sting and Roger Waters.

'In the studio the equipment lets you direct the QSound in any direction with a joystick. You'll notice this effect particularly in bits like the Techno bar scene in the game. You'll also recognise the music and voices in the game tune, as they were sampled directly from the movie in QSound. Capital Records are releasing the game's soundtrack on CD, too. Naturally, the cost of producing this kind of music is far more than usual, but the quality more than pays for itself.'
Edge How do you feel QSound compares to Surround sound?
TT 'Well, you won't get the full range of depth that a six speaker Dolby Surround setup can provide, but it's an impressive demonstration of what two speakers can deliver. The drawback is that it only works when the listener is positioned right in the centre of the speaker projection.'
Edge How about QSound on a cartridge?
TT 'Well, I'm experimenting with 8 or 16-bit samples, for the sound effects that go alongside the CD QSound music. It's still very much a learning process and I think that hardware restrictions will determine what's possible. The better soundcards that are available for the PC do offer these possibilities.'



Photograph: Peter Canning

Continued

interest and chipmaker Analog Devices is another licensee. The SoundBlaster firm Creative Technologies will be selling a new PC soundboard with QSound and synthesis from E-Mu sample/wave music chips.

QSound is based on the same principles as several other sound systems: it's psychoacoustic. There are four major factors that give your brain information as to where sound is coming from. The first one is the timing difference between one ear hearing a sound and the other hearing it. The second is the actual shape of the outer ear – this plays with the sound before it hits your inner ear, so your brain learns to recognise your ear shape and use it to identify sound. There's also the filtering – your head and your hair and your body actually filter sound: so a sound coming from the left of you, would go directly into the left ear, but would be affected by the shape of your body before it gets to your right ear.

All those factors combine to give your brain clues as to where the sound is. QSound uses these psychoacoustic principles, producing what is called binaural sound, but it also goes further, and changes it to transaural sound, which means that it works on a stereo speaker system.

Another aural imaging system, Roland's RSS (Roland Sound System), also does the same thing as QSound – RSS was used in the CDTV version of *Xenon 2*, which used a remix of Tim Simenon's Bomb The Bass track, called Megablast.

Putting together a simple soundtrack in QSound and RSS is fairly easy with the right equipment. You use a box with a bunch of DSP's (Digital Sound Processors) in it, into which you feed a

You probably spent £500 on carts or software last year, and that's all it'll cost you to get started

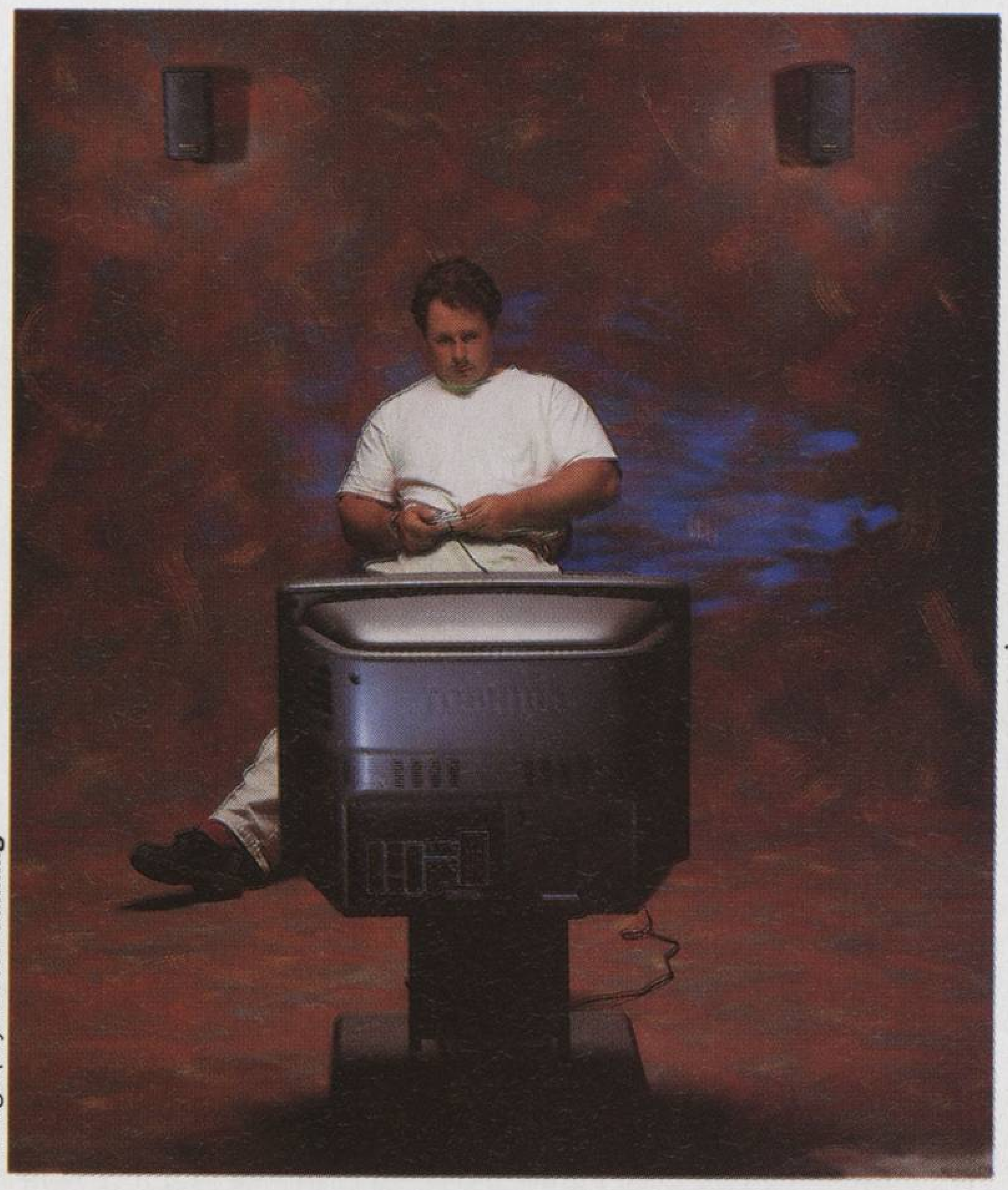
sound source – any sound like a trumpet playing or an explosion. The sound is taken in as a mono input, and then you use the dials on the equipment to position the sound up and down, left and right. Once you've encoded your sound effects or instruments in 3D you can lay as many instruments as you want on top of each other, each with its own positional cues.

But how do QSound and Dolby Surround compare? The big problem with QSound and RSS is that you have to be in the perfect position in the room – the sweet spot of the speakers – to get the best effect. Another drawback is that it isn't easy to position sounds behind you – because there's only two speakers, the sound bounces around the walls of the room. So it's not as perfect as if you were listening to it on headphones, for example.

The best that QSound gives most people is a slightly wider stereo sound image, like the speakers are a bit further apart than normal. Although it does go some way to improving the 3D sensation, a proper Dolby Surround setup is much more effective because there's a genuine rear speaker. If the soundscape is targeted behind you, there's no confusion about it – it's definitely coming from behind.

So, do you need to get tooled up for Dolby Surround to deal with the next wave of games? Well no, perhaps not the next wave, but sound technology in videogames is developing fast. And anyway it's not just games that'll have the sounds to match your system. Films on video and TV programmes like Star Trek: The Next Generation and Northern Exposure already come with Surround soundtracks. You probably spent £500 on carts or software last year, and that's all it'll cost to get started. So why wait?

Tooling up for **big sound**

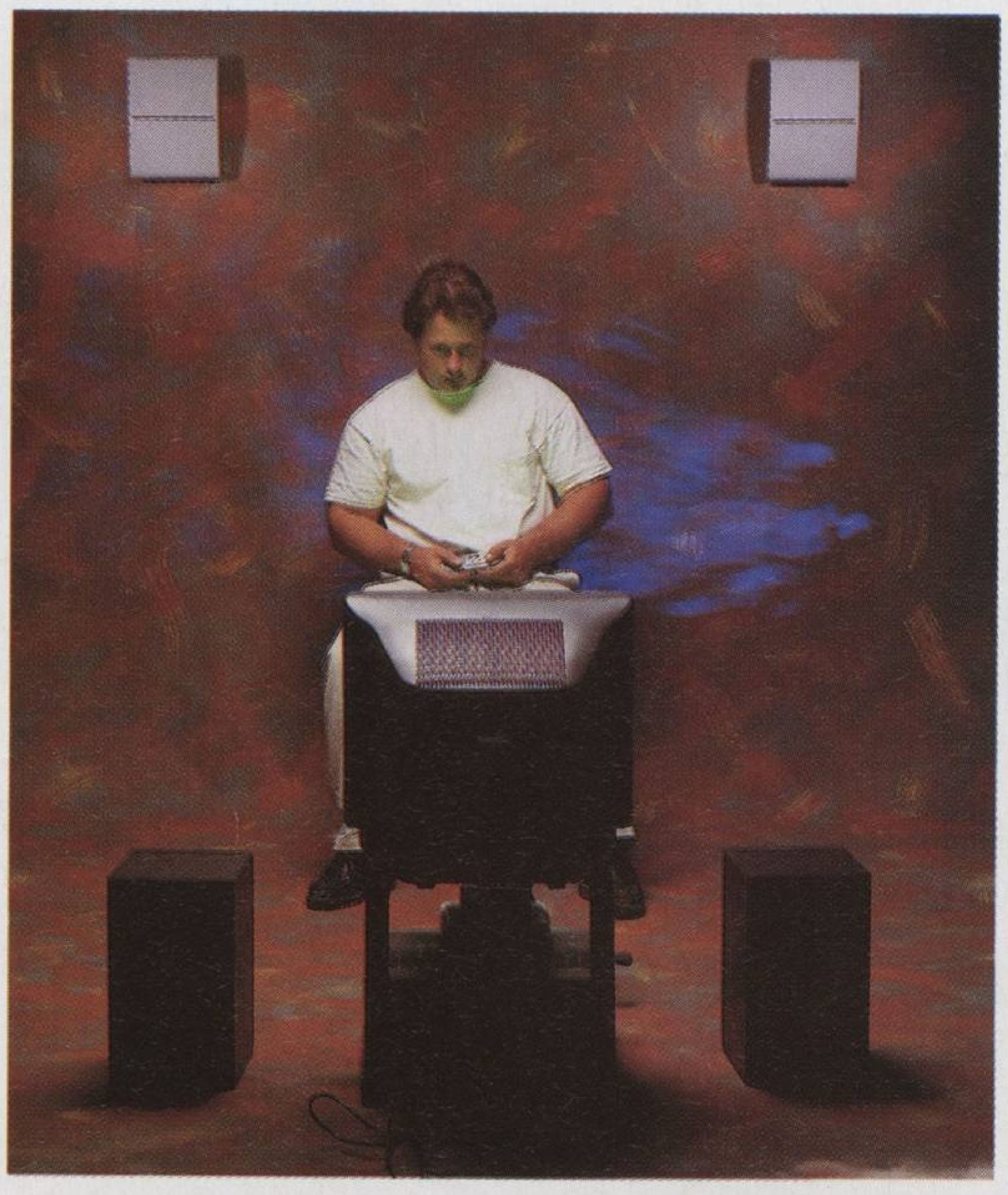


Photography: Peter Canning

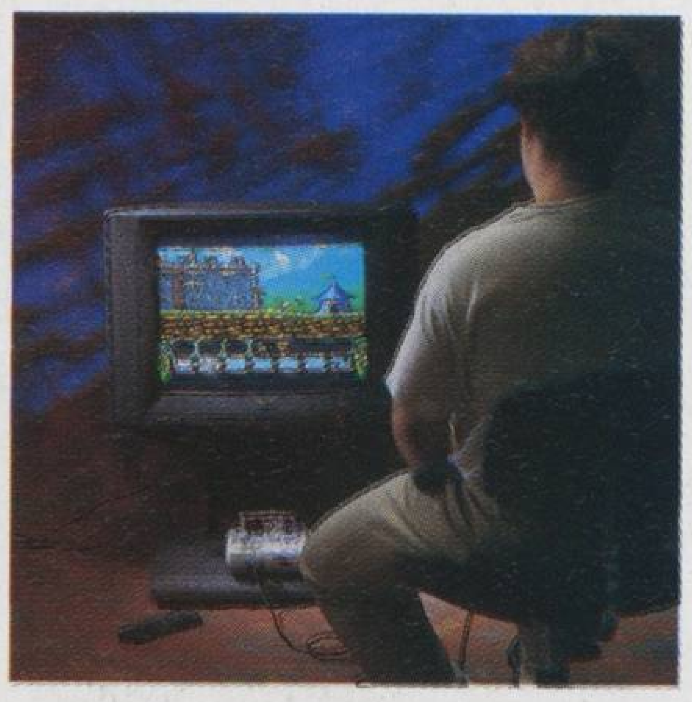
For the full effect of Dolby Surround you need some kind of decoder. These come in two varieties (ignoring the shockingly expensive THX): you have the standard Dolby Surround, and the superior Dolby Surround with Pro-Logic.

You can either get a hifi separate, called an AV Amplifier, or now you can get a number of TV sets with the technology built in. All the units require that you have at least two front speakers and two rear effects speakers for Surround to work properly.

The table on the right contains all the highest-rated Dolby Surround equipment available at the moment: certainly the bigscreen TVs are excellent value.

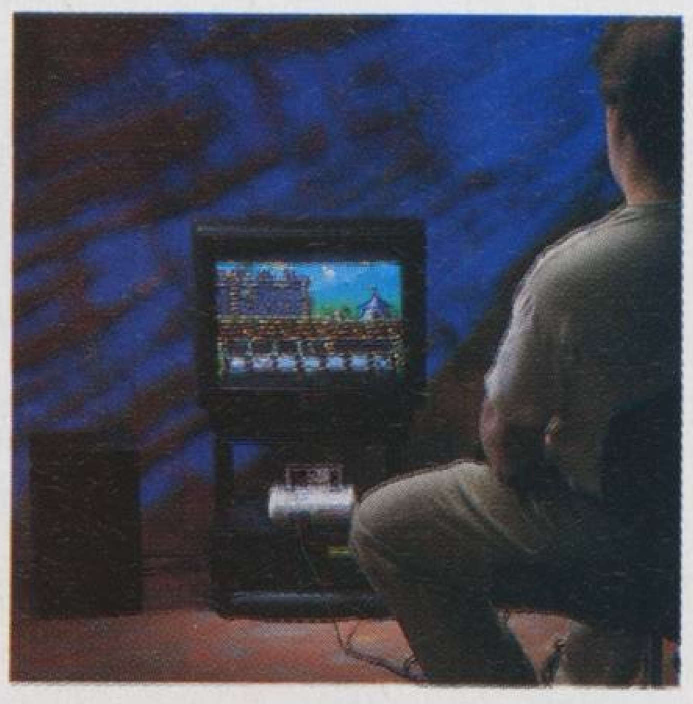


Surround sound the easy way: buy a ruddy great TV with in-built Pro-Logic circuits and two suitable rear speakers



Edge recommends

Surround televisions	
Toshiba 2527DB Surround TV	£800
Hitachi C2574TN Pro-Logic TV	£850
Toshiba 2539DB Pro-Logic TV	£900
AV control amplifiers	
Kenwood KR-V7040 Pro-Logic	£300
Yamaha DSP-E200 Pro-Logic	£350
Pioneer VSA-701S Pro-Logic	£450
Denon AVC 3020 Pro-Logic	£650
Yamaha DSP-E1000 Pro-Logic	£650
Kenwood KA-V8500 Pro-Logic	£700
Effects speakers	
Mordaunt-Short CS-1 Shelf/wall-mounted	£100
Yamaha NS-E80 Shelf/wall-mounted	£119
Heybrook Prima Shelf/stand-mounted	£130
Jamo Sat 500 Wall-mounted	£140
Canon S-30 Stand/shelf-mounted	£150
ZYP A1 Stand/wall-mounted	£199
ZYP A1T Stand/wall-mounted	£219
B&W Solid Monitor Stand/wall-mounted	£230



Surround sound the not-so-easy way: buy an AV amp, two front speakers, two rear speakers – and a telly



The prize: one Toshiba 25" Surround TV, one Super Nintendo and one copy of *King Arthur's World* from Jaleco. A grand's worth of anybody's money. Nearly

Photograph: **Peter Canning**

Surround yourself with big screen sound

Reading about **Surround Sound** is all well and good, but what you really need is an £800 25inch Toshiba Dolby Surround TV to get you going. OK, one £800 25inch Toshiba Dolby Surround TV coming right up...

Edge, with a little help from Bandai, Jaleco and Toshiba, have acquired the hardware opposite – only to give it all away to an **Edge** reader.

The 25inch Toshiba telly incorporates Dolby Surround decoding circuits and comes with a pair of effects speakers which you place at the rear of the room, preferably high up. Plug in the SNES (which also comes as part of the loot), load up *King Arthur's World* (ditto) and give your ears a treat. And because the TV has stereo speakers on either side of the unit, your QSound and RSS-encoded games also sound that little bit better.

There's a grand's worth of kit here and, assuming you can perform the following task, you could win the lot. In this issue, we mention ten games for home consoles that support either Dolby Surround, QSound or Roland Sound Space systems. Name them.

When you have all **ten** game names jot them down on the back of a postcard or sealed envelope, and address it to:
Edge, 30 Monmouth Street, Bath, Avon BA1 2BW.

The winner's name will be printed in **Edge** three, so get your entries in before the end of September.

Smallprint: No employees of Bandai, Jaleco, Toshiba or Future Publishing may enter. People who only want to win so that they can sell the kit and buy some knackered old motor may not enter either. Entries received after September 30th go in the recyclable paper bin (that's the paper, not the bin). **Edge**'s decision is final

Aladdin

There are 20,000 free **Aladdin** tickets: book for Friday 12th, and get into the stunning new Disney film free

GAMESMASTER

Channel Four will be filming **GamesMaster** at the show, and will broadcast its regular episode *live* from FES

SEGA

Want to try the latest **Mega CD** stuff: *Silpheed, Thunderhawk?* **Edge** already has. Now you can check them out too

AMIGA®

Is the new 32-bit **Amiga CD32** games system really all it's cracked up to be? Get to FES and decide for yourself

Nintendo®

There's already rumours of a big announcement from **Nintendo** at the FES. Don't be left behind. Be there

Tickets are only available in advance! The only way to get tickets is to phone **051-356 5085**. Price **£6.95** each or **£24.95** for family groups of four (with at least one adult). No tickets will be sold on the day

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Psygnosis' *Microcosm* pits your blasting skills against miniaturised foe *inside* a human body

First thing that hits you is the stunning intro sequence – 400 seconds of CD film footage



Microcosm's box artwork – like most of the in-game graphics – was rendered using £10,000+ Silicon Graphics Indigos. The original file takes up 35Mb of storage space



Intravenous After Burner: the making of a Microcosm

For many software companies CD-ROM is just a buzzword. For **Psygnosis,** it's buzz*work:* they've been slaving away for the last three years preparing for the CD revolution. *Microcosm* is their first CD title; **Edge** speaks to the disc jockeys

Since its inception in 1984, Psygnosis (*Shadow Of The Beast, Lemmings*) has constantly looked towards new technology. They were among the first to show what the ST and Amiga could do, the first to show off CDTV's potential, and were developing on CD while everyone else was just listening to them.

The first fruit of their labours is *Microcosm* – a shoot 'em up cross between *After Burner* and the movie Fantastic Voyage. The game is only currently available for Fujitsu's CD-based FM Towns, but versions for PC CD-ROM, Mega CD, CDTV and 3DO are already in production.

When you load up *Microcosm*, the first thing that hits you is the stunning intro sequence: a full 400 seconds of digital film footage dragged off CD. It features 3D images rendered using £10,000+ Silicon Graphics Indigos and live-action footage. **Edge** spoke to lead visualiser **Jim Bowers** about the creative process.

Edge You were mainly responsible for the intro: what planning was involved?
JB 'The intro didn't have a script or storyboard – we just made it up as we went along. We had a rough idea of what we had to do, but the deadline was so tight we just had to jump in and do it.'
Edge So just where did you start?

Continued next page

Cosmic strip

Microcosm's Bladerunner-inspired intro lasts 6 minutes, 40 seconds, and runs at 15 frames per second. To give you an idea of how the sequence works, we've broken it down into 26 separate images, at roughly 15 second intervals...

1 Time: 2051. Place: Bator system, planet Bodor. The camera slowly pans across the planet, settling on a sprawling city below



2 We descend past the neon towers and into the depths of the cybercity itself. The teeming backdrop is a simple 2D cyclorama



techview: **CD**-ROM



Photograph: Adrian Ford

Director and second unit cameraman of the *Microcosm* movie: intro man Jim Bowers (left), and vein designer Neil Thompson (right), outside Psygnosis' headquarters in Merseyside, Liverpool

Continued

JB 'It was actually Neil's idea: we were having a brainstorming session, and the old 'inside the body' films sprang to mind. We did the initial design work and graphics on the Amiga, and then we got the Silicon Graphics machines.'

Edge What made you choose Silicon Graphics workstations?

JB 'Well the Amiga can do most things that the rendering software can do, but the Indigo is just so much faster. It's designed around a dedicated graphics system, but can do many other things. We use the same software as the computer-generated TV commercials, and films like The Lawnmower Man.'

'Just one image can take up a full meg – we're talking 16 million colours'

Jim Bowers, lead visualiser

Edge Presumably then you need a lot of storage space?

JB 'With *Microcosm* we're talking gigabytes. One of these images can take a full megabyte for just one frame – we're talking 16 million colours. The box cover was generated using 3D models on the Silicon Graphics and the finished single image took about 35 megabytes.

'We had a file server with lots of hard disks strung together; I think in the end we had about six gigabytes.'

Edge That's a hell of a lot of memory!

JB 'Yeah, one of the main things about CD is the scale: for instance, *Microcosm* probably contains more computer graphics than any feature film ever made! And it was done in the same time with less people.'

Edge How do you create the 3D graphics?

JB 'A lot of the vehicles you see in the game – the hunter-killer, the spacesuit, the hoverpod – were built a while ago on the computer in 3D. We generate each form like you would in an Amiga package, but there's more to it than that: you have to model everything, apply textures and test it all the time to see if it looks okay.

'I think possibly the spacesuit's the most fun: all the limbs articulate. I also built the end-of-level guardian creatures, based on **Nick Burcombe**'s designs. I animated about half of them and **Paul Franklin** animated the other half.'

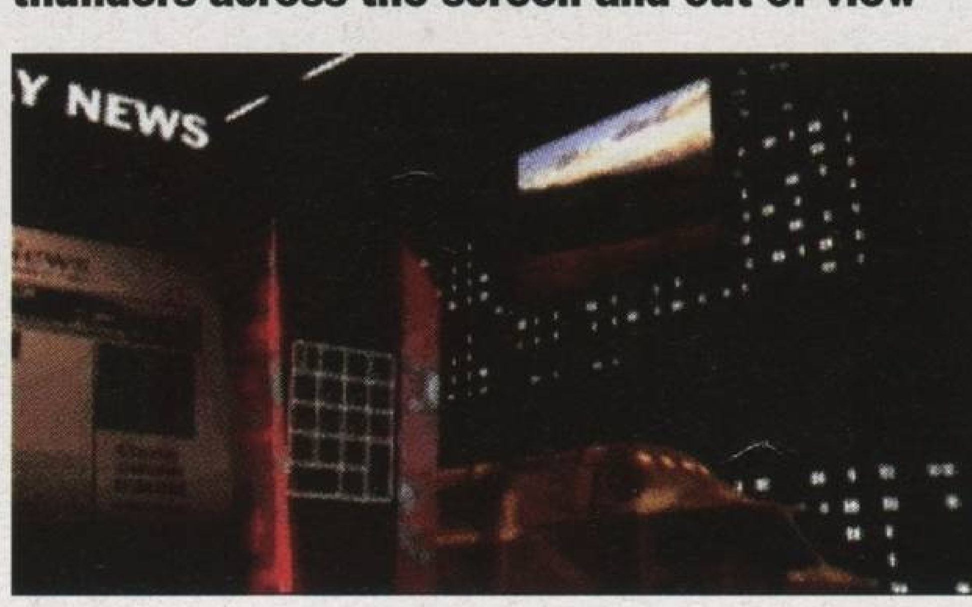
Edge What were the toughest scenes to animate and render?

JB 'Probably the street scenes: you're trying to give an impression of it being a

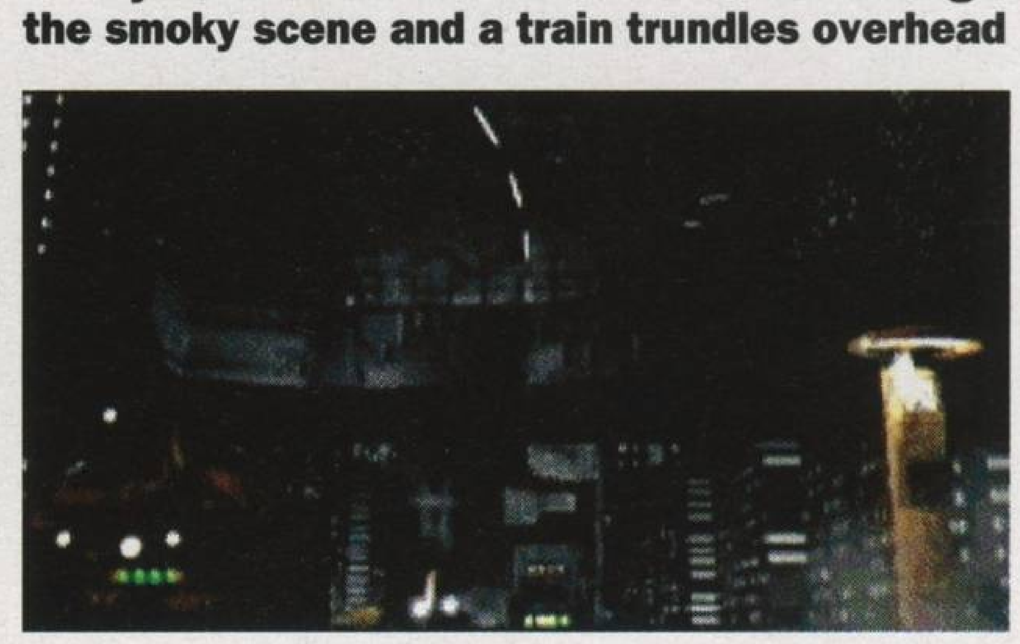
3 **The camera zooms into a newspaper stand. As the headline attests, the city is gripped by a corporation war: Cybertech versus Axiom**



4 **The view pans right to reveal a busy street scene, following a 3D model truck as it thunders across the screen and out of view**



5 **The camera pauses at the base of the Cybertech tower. More traffic cuts through the smoky scene and a train trundles overhead**



street, something that's recognisable, and it's really hard to do. You stick a couple of buildings in and suddenly realise they have to be lit in a certain way. And then you stick more buildings in, and it just gets more and more complex.

'Another hard part was the rooftop sequences: filling a rooftop which is meant to be flat, making it look busy. That's quite a tricky one: the detail you put on it, deciding what to do, what to leave off. I tried to make it look fairly functional, then I fit the people within it that way.'

Edge How did you manage to include footage of real people?

JB 'We filmed some of the team against bluescreen. A lot of time was spent building props and doing all the costumes: **John Harris** did some uniforms for us. That took about three weeks. Then we spent a week just filming, going through different lighting set-ups.

'It was quite exciting. We had to do it at night as well; we were doing it in an office with windows everywhere and there was no way we could do it during daytime.

'We recorded onto tape using a S-VHS camcorder. You select a bit you think will be useful, grab it and put it through our custom-written image processor that extracts a transparency mask on the colour blue. Then you composite it in with the actual scene; there's a compositing tool in the software which lets you take a number of layers and place them on top of one another.'

Edge How did you make the helicopters shiny – like the H-Ks from Terminator 2?

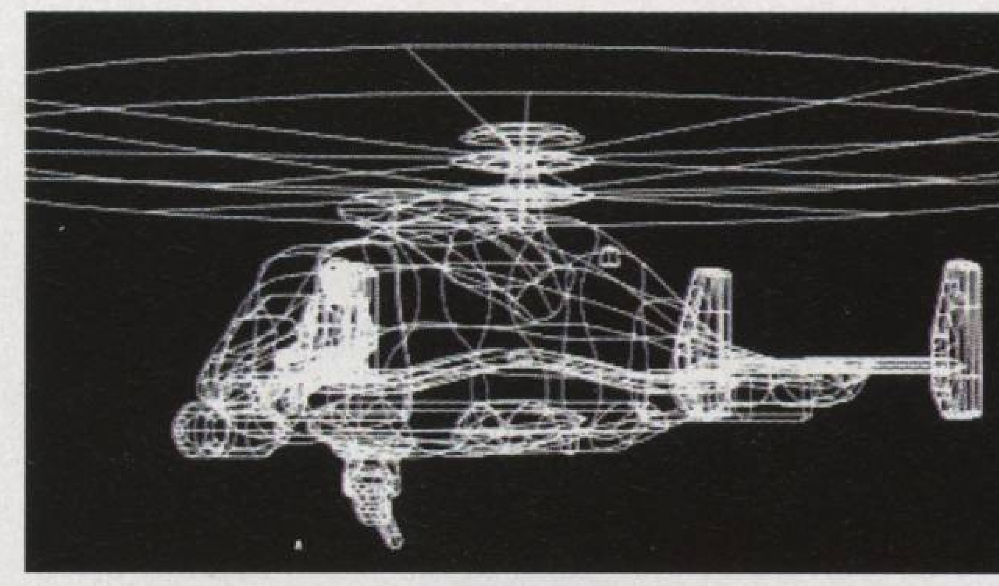
JB 'Again it's all done on computer, using material techniques, texture maps; lighting's also very important. When we did the bluescreen video, we basically had two keylights either side and we found we were getting it very bright on the sides. To recreate that on the computer, I put very intense lights either side and found I was getting a matching of live action with the generated footage.

'It also helps if you you mess around with the textures, if you flaw the texture, try not to get it looking perfect – one thing

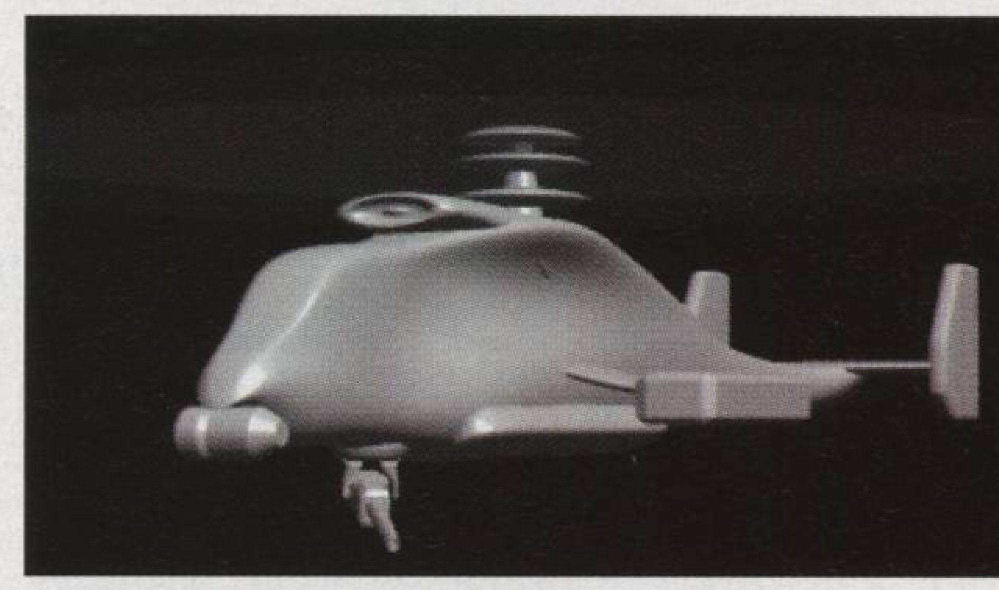
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How 3D is rendered in Microcosm

Step one: A linear display of the 3D model is produced in wireframe form, showing the construction lines of the helicopter. This basic graphic can be manipulated in real-time, allowing the artist to work out his animation routines



Step two: The helicopter is simply shaded and coloured to show its three-dimensional surface. There are no textures, effects or shadows at this stage, it's just a basic representation of the model's form to see whether it looks right or not



Step three: Images are mapped onto the surface for added detail and texture, similar to decals on a model aircraft. Much of the detail is made from simple 2D images drawn on an Amiga and imported into the rendering program. Different symbols and textures can be wrapped around the 3D model in a variety of ways



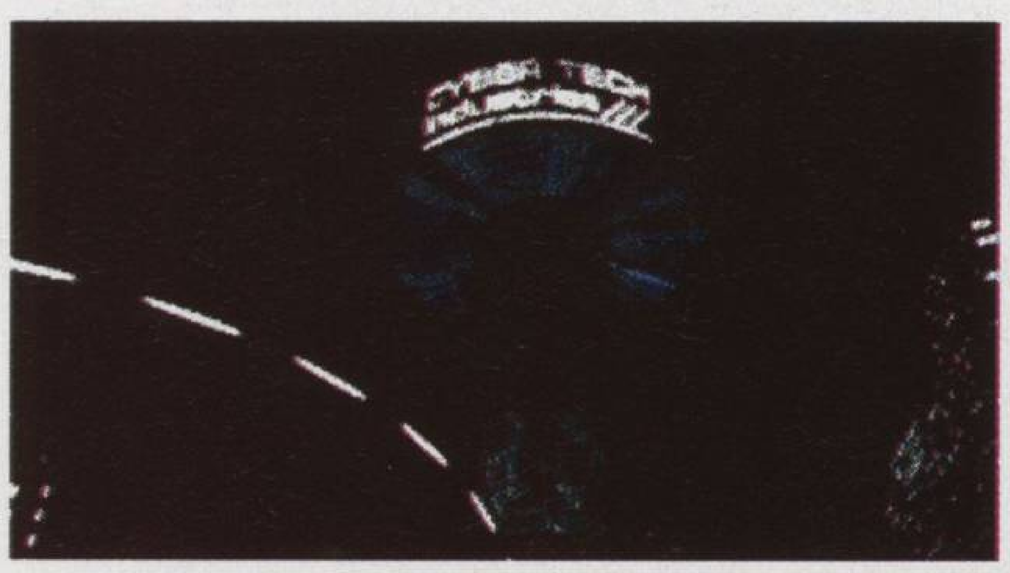
Step four: The lights in the scene are changed from 'no-shadow' to 'ray-traced', which means that they now cast shadows correctly. At this point the artist can try different lighting set-ups to see which one provides the best images



Step five: Different images can easily be layered on top of each other – or 'composited' – using the rendering software. In the previous image not only did the computer render the RGB colour information, but it also generated a transparency mask. The helicopter is then easily 'pasted' on top of another image – in this case a view of Bodor city



6 **A couple of hoverjets fly past as the camera tilts up, coming to rest on the glowing crown of Cybertech's headquarters**



7 **The skyscraper is teeming with security guards: real people were filmed against bluescreen and composited into the 3D scene**



8 **3D animator Nicky Carus-Westcott dons military headgear while scanning the city below for any signs of enemy activity**



techview: CD-ROM

I hate seeing is a perfect 3D model; we're trying to recreate imperfection.'

Edge Just how complex are these scenes you're generating?

JB 'In the opening street scene there are 241 models, 22 of which are animated. When it comes to triangular polygons, you've got 85,331 and there about seven light sources in that particular scene. I suppose that would have to be the most complex scene in the whole intro, and in the whole of the game.'



Photograph: Adrian Ford

Looking suspiciously like a colonial marine from Aliens, Chris Moore dons a *Microcosm* uniform. Players were shot against blue-screen and composited into the 3D scenery

Edge The cityscape background looks massively complex; how do you do that?

JB 'The background is a very simple cyclorama. It's a rendered city: I've taken a frame of the city and texture-mapped it onto the cyclorama.'

Edge Just like a 3D image projected onto a 2D plane?

JB 'Yeah, it's quite a speedy thing to do. We cut as many corners as we can. If you've got a static background with no movement on it, you don't go rendering the background every time, which could be horrendously complicated. We also use a lot of compositing; it's just the most simple, efficient method.'

Edge But it's quicker to render for the FM Towns because it only shows 256 colours?

JB 'No, everything's still rendered in 24-bit, millions of colours and then we downgrade them with compression techniques. They're then given to the programmers who crunch 'em onto disk.'

Edge In the game proper, how did you do the vein walls?

JB '**Neil Thompson**, the second lead visualiser, did the legwork on that technique along with **Gorvan Corbett**. It's a series of loops: you set up a series of sections, and you make sure they continue one on from the other. You have limited visibility as well, so you don't have to put hundreds of animations in the background.'

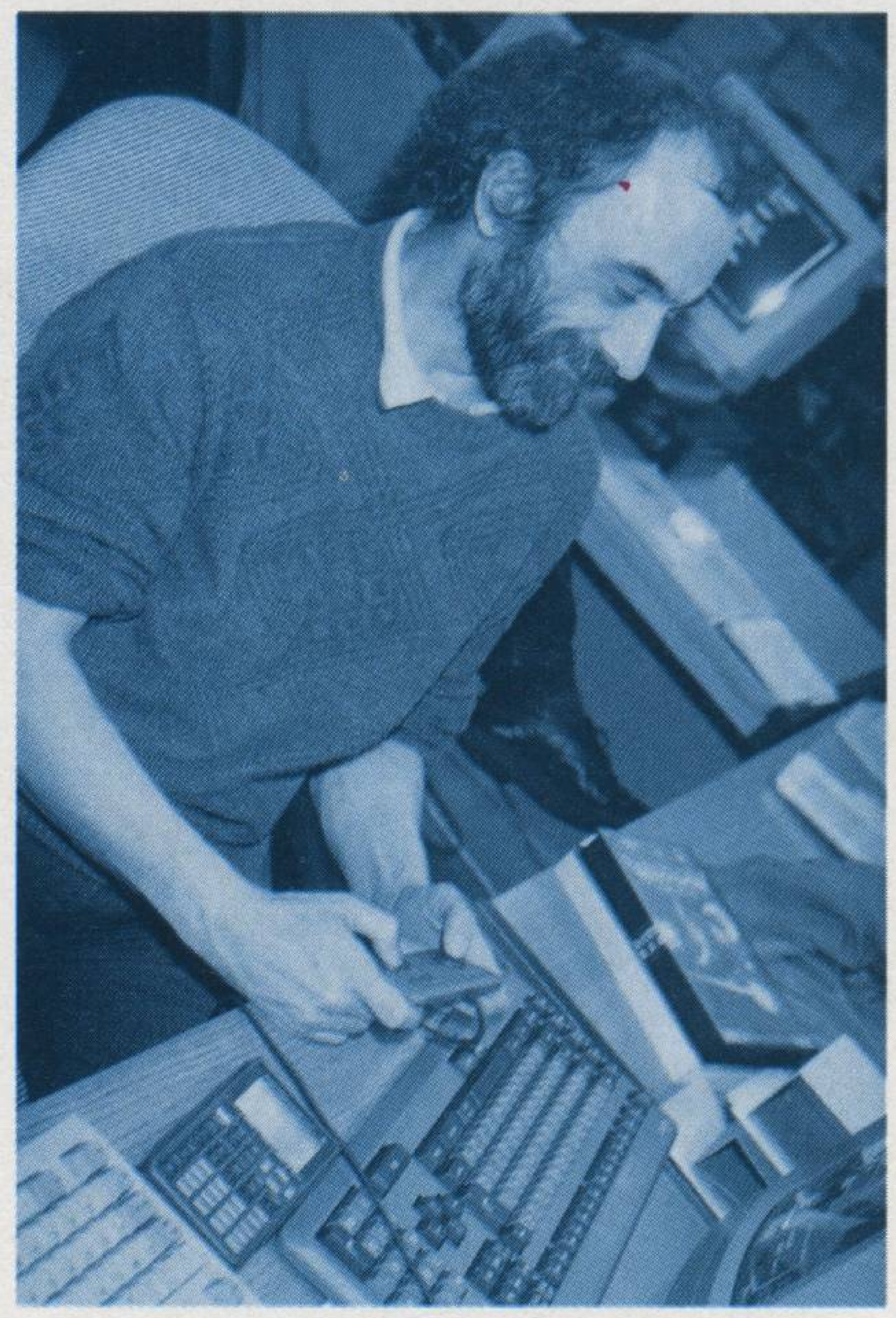
Edge So the dark and moody atmosphere hides a multitude of sins?

JB 'It certainly does!'

Edge Over to you **Neil Thompson**; how did the veins come about?

Neil Thompson 'The veins were the first idea, and they were essential to the product. We tried a couple of simple left, right junctions and then it got more and more complicated, and now there are thousands of veins in there.

'The idea was to get a visual feast and tie a game in there somewhere as well. We knew that gameplay on CD was going to be limited, and the real strength of CD is that you can get piles and piles of graphics in.'



Photograph: Adrian Ford

***Microcosm*'s lead programmer, John Gibson, getting to grips with the FM Towns machine**

Edge So how are the veins created?

NT 'It's basically a cylinder: you can randomise the points on a tube to give it an uneven textured effect. The tricky bit was trying to get them to wrap, because you can't run 2,000 frames and then duplicate them, so we had to think of a way of doing them in short bursts. I think they ended up being in short 20-frame bursts, so you get a straight, and then a junction, and then you go back onto the same straight again, all

'In the opening street scene there are 241 models and 85,331 polygons'

Jim Bowers, lead visualiser

9 Suddenly a huge helicopter gunship appears, as a real-life trooper looming in the foreground of the screen waves it on.



10 The chopper skims across the rooftop to rendezvous with an incoming medical transport carrying Korsby, Cybertech's boss



11 Meanwhile, a 3D rendered exoskeleton patrols the perimeter, walking in front of and behind live action guards



done to save memory.'
Edge What, for you, is the next step?
NT 'I'd like to see lots of surreal stuff. In computer graphics everything's too clean cut, too obvious. Everyone does big spaceships, planets, all that sort of stuff. Not more imagination, but a bit more flair.'
Edge How much of the game's potential do you thing you've fulfilled?
NT 'About 25%? It could have been a lot better, but we couldn't justify spending five years doing it. By then, people would have had all sorts of games out and we'd have missed the boat. This way we're first in.'

But pretty pictures do not a game make: without some heavy code, all those lovely 3D images don't do very much. The man who injected life into the veins of *Microcosm* was **John Gibson**, the project's lead programmer.

Edge What's so special about FM Towns?
John Gibson 'The most significant things are its CD-ROM and its graphics. It has 2Mb of RAM – that's the minimum configuration – and we use 1.5Mb as a CD buffer, with the rest of it as a workspace and for the program itself.

'Everything on the Towns is a sprite: the film was all sprites, everything that's laid on top of it is a sprite – the only thing that isn't is the control panel! You can have up to 1,024 16×16 sprites on screen so you just bolt them all together like a sheet of postage stamps. That's the best way of doing it, as there's a sprite controller in there which leaves the 386 processor to do lots of other juicy things.'
Edge What difficulties did you encounter coming to CD games?
JG 'Obviously it's the sheer volume of the data: the principle problem is getting the data off the CD quickly enough. Ultimately that means you have to compress it something rotten; we've got some pretty sophisticated compression techniques but because you've got to decompress the stuff so quickly, that limits how much you can compress it in the first place.

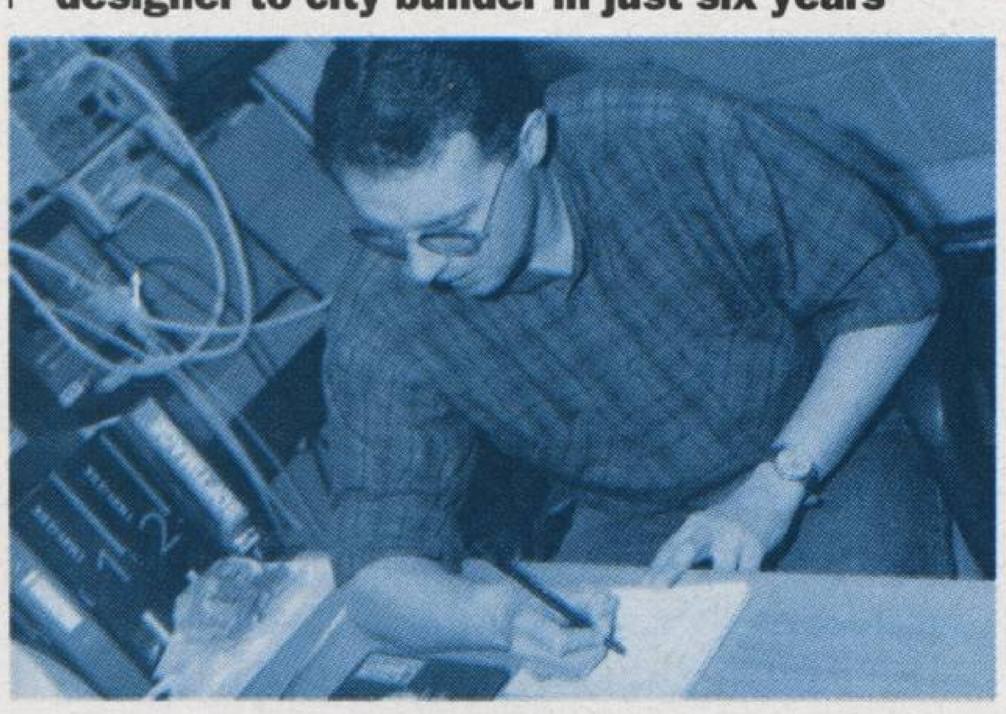
'When the film comes from the Silicon Graphics, it's three bytes per pixel, so you're talking 108K per frame. When we get it it's in a nibble per pixel format which comes out at 18K, and we can get them right down to 9K. It doesn't lose a lot in quality: the only thing you really notice is a bit of banding. Because you haven't got so many colours, you don't get the same sort of anti-aliasing.

'The CD theoretically can only supply us with around 7·5 to 8K for each frame, so we're always running a bit over the top. But there are ways of getting round that; a lot is to do with designing efficiently.

'It runs at 15 frames a second – it's fast enough, but it would have been nice if it had been 20. To do that, we'd have had to make the images a lot simpler and it wouldn't have been so impressive. We opted in the end for more complex images at 15 frames a second rather than black screens at 20 frames a second!'
Edge What else can the CD format do?
JG 'You can use it for giant data tables as well. You can speed up all the processing that way: instead of the processor doing the maths, you do it on a utility and store the data in a table. It might be a 64 or 128K table which you can't load in off floppy disk, because it stops the game. But because the CD always loads stuff in about five to ten seconds before it's needed, you can load these tables in and when you've finished with them, throw them away, because you can load them in next time you want them.'
Edge The Silicon Graphics images are 24-

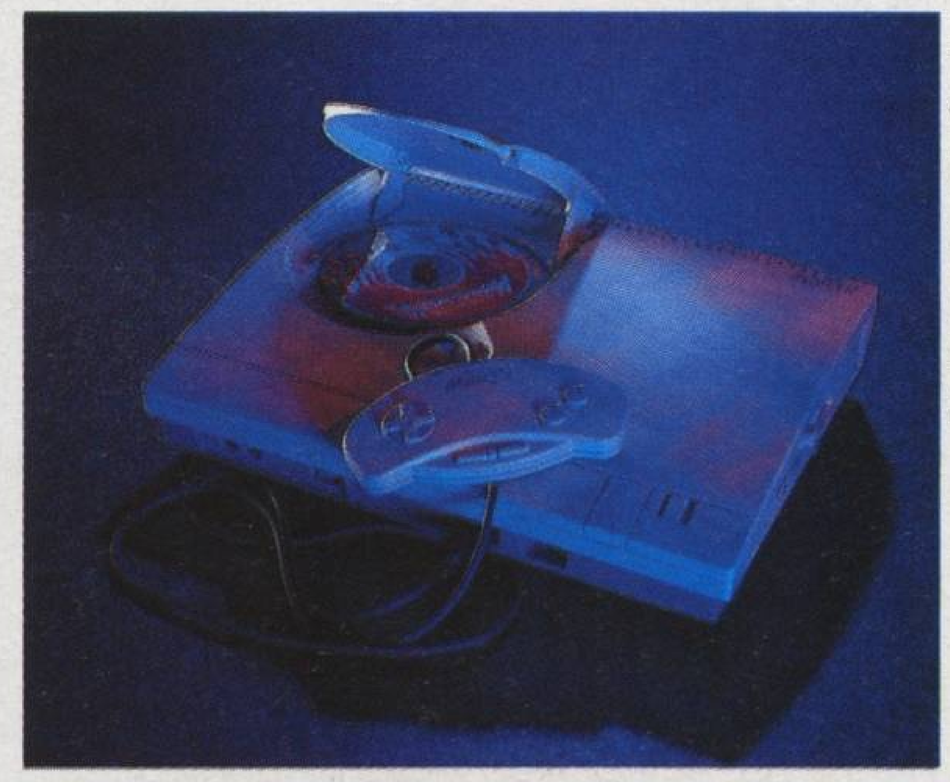
Continued next page

Graphic artist Jim bowers – from kitchen designer to city builder in just six years



Photograph: Adrian Ford

Hardware: FM Towns Marty



Photograph: Peter Canning

The FM Marty console – baby brother of Fujitsu's stunning FM Towns

Fujitsu stole a march on their competitors five years ago when they released the first CD-based computer in Japan. The oddly-named FM Towns was (and still is) ahead of its time, running a fast 32-bit 386 CPU with a full 16 million colour palette.

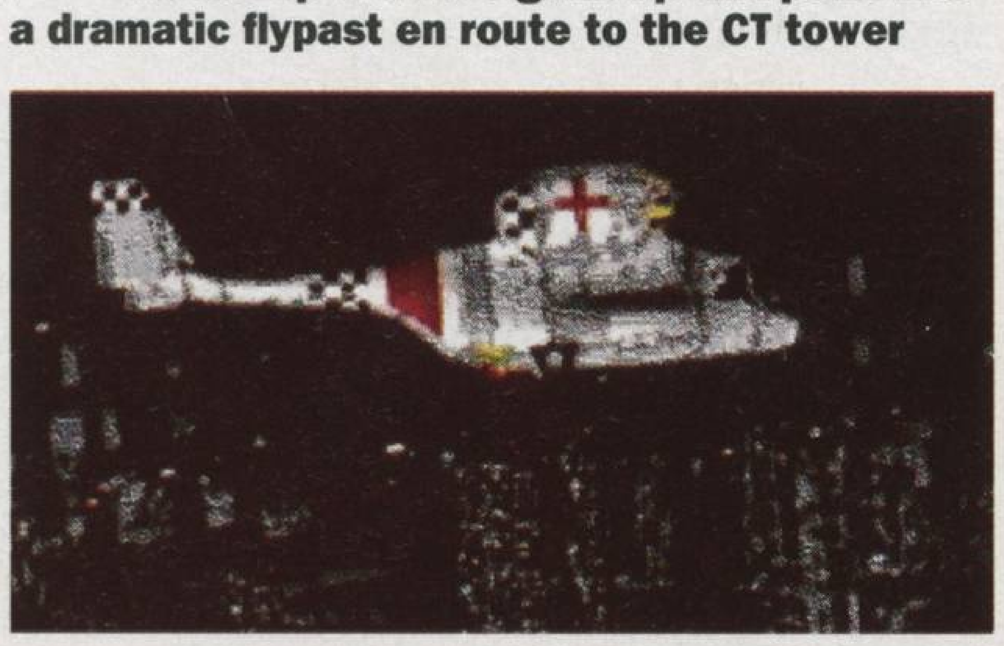
A home console version was launched earlier this year. The equally oddly-named Marty boasts a CD drive, internal 3·5" HD floppy disk drive and a smartcard slot, all for about £500. Marketed as a games machine, it comes with a dinky three-button joypad, although you can also get a mouse and keyboard for FM Towns compatibility.

The Marty has the same spec as a low-end Towns, running at 16MHz. It has a screen resolution of 307,200 pixels (640×480) and can display up to 32,768 colours on screen. The majority of graphics are generated using a dedicated sprite engine – with the potential for 1,024 16×16 hardware sprites.

It supports six-channel FM and eight-channel PCM stereo sound, and the Marty has AV and S-VHS ports, plus mike and earphone sockets.

But thanks to Fujitsu's parochial distribution and marketing policies it's unlikely the FM Towns will ever be sold in large quantities in Europe, although the Marty is now being featured in several big US games mags.

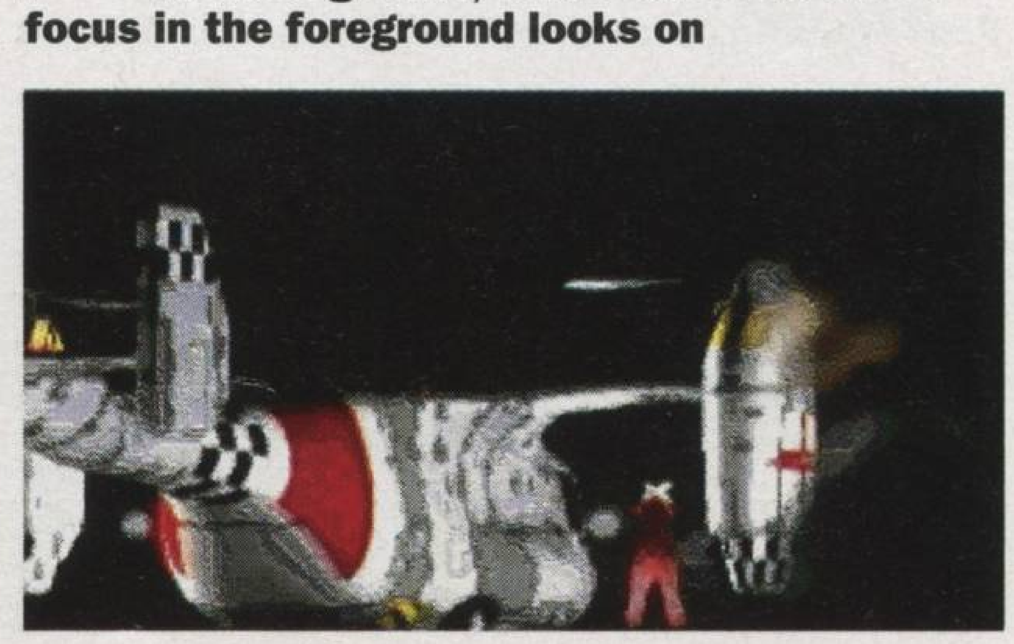
12 **The medical transport carrying Korsby meets up with the gunship and performs a dramatic flypast en route to the CT tower**



13 **Safely inside Cybertech airspace, the gunship peels off and lands elsewhere on the sprawling rooftop**



14 **The medical transport touches down in the background, while someone out of focus in the foreground looks on**





Photograph courtesy: Serious Music

Rick Wakeman: ***Microcosm*'s maestro**

Sound **tracks**

Microcosm's ambient music was written by ex-Yes keyboardist **Rick Wakeman.** His involvement with the project started three years ago when he met some of the Psygnosis management at a concert. 'I knew Psygnosis because of *Lemmings*, which my kids play,' he said. 'They asked me if I'd ever thought about doing music for computer games, and I said yes, but it's unbelievably inhibitive.'

With the advent of the CD format, Psygnosis were able to offer Rick the freedom to write his music under normal recording conditions – which is exactly what he did.

'I was in the studio for eight or nine days, and then went back for another two days. It was a great thing to do and I'd love to do some more... I was able to use the full studio facilities and put out some music that I'd be delighted to appear on a normal CD. I really felt part of a pioneering project.'

Choosing instruments he thought would be most suited to the project, Rick used a Korg 01/W Pro-X, a Kurzweil 2000, a Korg Wavestation, a Roland JD-900, an Ensoniq SQX, and several others from his extensive collection of synths and keyboards.

It was all recorded onto the Steinberg Cubase system and parts of it were transferred to a 24-track Otari for tweaking. It was mixed onto DAT (Digital Audio Tape) at a high sample rate of 48kHz as against the normal commercial rate of 44.1.

Inner space



Photograph: Peter canning

Microcosm genuinely fills up an entire CD – all 478Mb's worth. **John Gibson** did some rudimentary maths to calculate what percentage of the disk was taken by the different types of data:

CD Audio	163Mb	65.9%
Total code	15Mb	34.1%

The 315Mb of binary code is broken down into the following data:

Rendered graphics	298Mb	62.3%
Other graphics	8Mb	1.7%
Sound samples	7Mb	1.5%
Ancillary data	1.6Mb	0.3%
Game code	0.4Mb	0.1%

Continued

bit, millions of colours – so how do you use them on the Towns?

JG 'We've got utilities that begin by degrading the image, then in the case of the Towns we have a palette of 256 colours, but it's not 256 colours all over the screen. The screen's like a series of 16×16 cells and each cell can have a selection of colours from that 256 colour palette. Once that's been done, the data's compressed and presented to the programmer.'

Edge Is the lack of colour a limitation?

JG 'One of the big advantages of the Towns is that you can run it in a 32,000 colour mode. As long as you're careful about the images, 256 colours is more than enough. In fact the utility often generates less than 256 colours – about 220 – so it's not really at the edge of our limitation.'

Edge How do you get all that data from the artists?

JG 'We've got a network so all the Silicon Graphic Indigos, all the PCs, all the Macs are all joined together and we've got a file server, like a central pool for everything. Say Jim's produced a 50-frame film on the Indigo: the utility will pick those 50 frames up, choose the best palette for that film, degrade the image by that palette, pack the data and spew out something thing that the Towns can take. My PC's on the network, so I can take and read that file from the network and can send it straight to the Towns – there's a scuzzy [*SCSI*] link between the PC and the Towns. Then we put the data on a hard disk which acts like a pseudo CD to try it out and check it.'

Edge How long do the non-interactive movie sequences last?

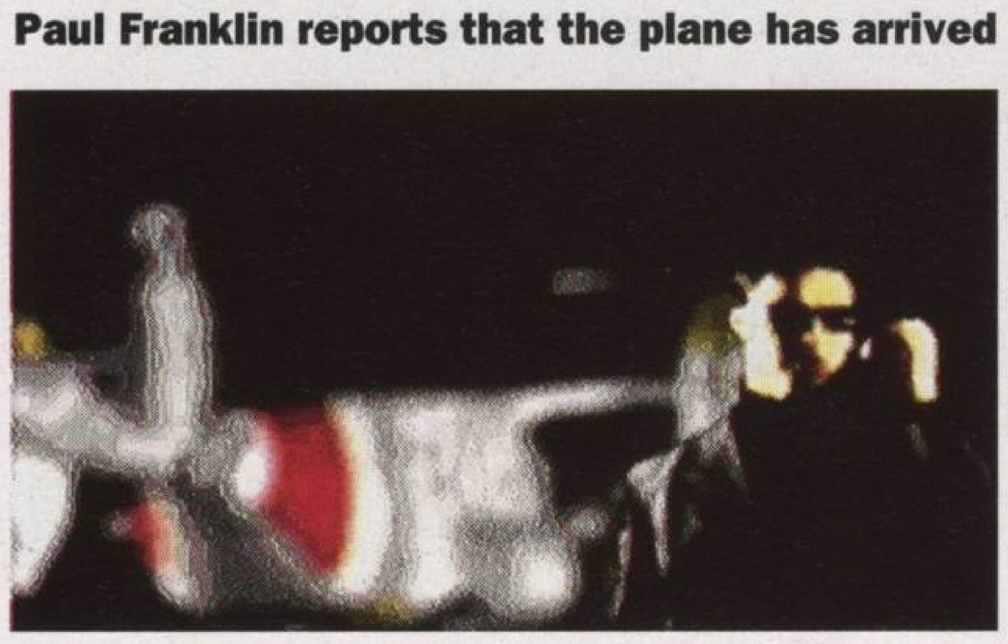
JG 'We generated around 44,000 frames of animation.'

Edge How do you archive that stuff, and how do you play it all back?

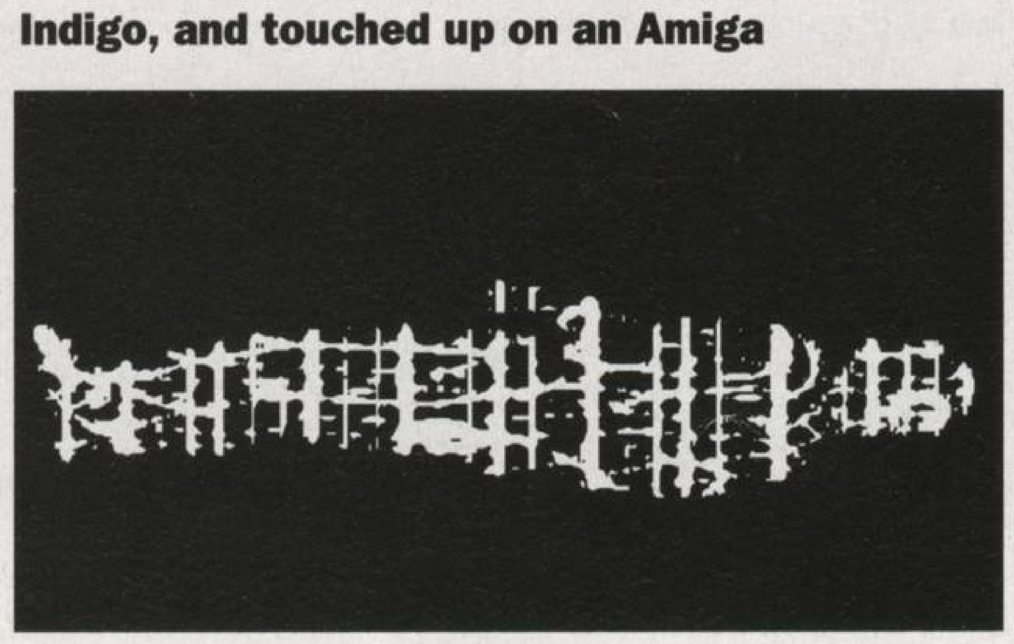
JG 'You've got to be careful how you lay the CD out to cut down the seek times. That's one of the biggest problems: you don't want to go from one end of the CD to the other, because it takes so long. So there are certain files that are common to various levels in *Microcosm*.

'There's a core program that's there

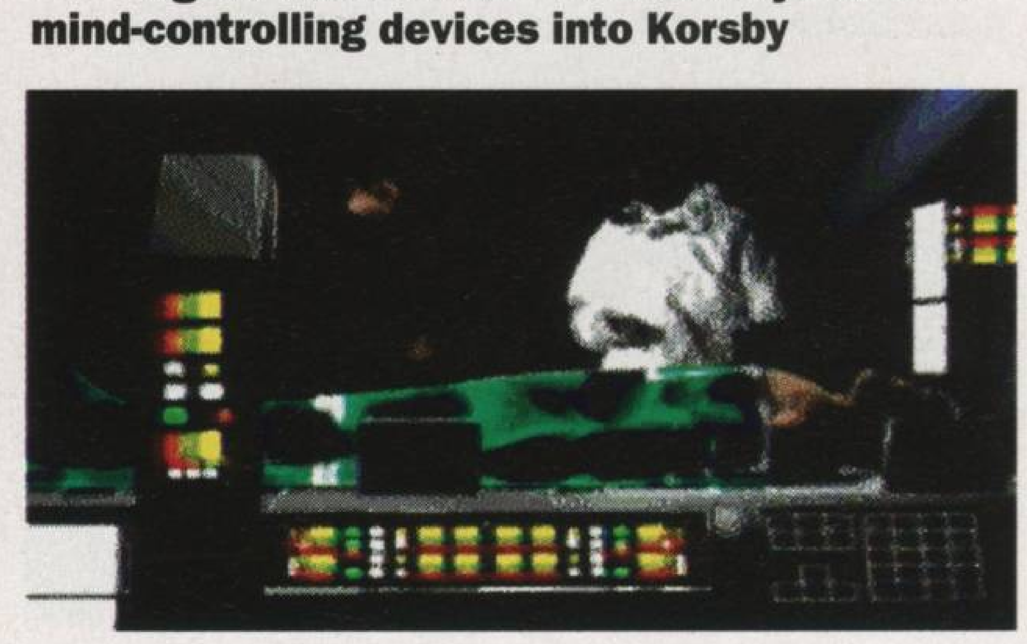
15 The rendering software lets you pull focus like a real camera: 3D animator Paul Franklin reports that the plane has arrived



16 In Medical, Korsby's body is scanned. The wireframe form was rendered on the Indigo, and touched up on an Amiga



17 Treacherous Dr Knowles and an Axiom agent discuss the imminent injection of mind-controlling devices into Korsby



'For the initial development *Microcosm* cost between $600,000 and $750,000'

Ian Grieve, licensing manager

all the time, which contains most of the stuff like reading the CD, handling the sound, changing screen modes, god knows what else, and then every level is an overlay that's loaded in with its own unique piece of code.'

Edge It seems that you have masses of cinematic background for the intravenous sections – how do you handle it all?

JG 'A lot of it is broken up into small films, no more than about 50 frames, and they're all chained together to produce the final thing. That's why you can come along one part of the brain and branch one way, branch another way. In just one level there's probably something like 1,500 frames – say 30 films at 50 frames each. And you've got that six times over, for each level.'

Edge How much more interactive can you make CD games?

JG: 'All the CD does is just keep reading files until something tells it not to. It's a standard 150K/second drive. 3DO is 300K/second, and probably this new Amiga CD console will have a 300K, too. [**Edge**: *it does.*] Anyone producing a CD drive now would be mad not to have a 300K drive.

'The real restriction with interactivity is the rate at which you can get the stuff off the CD: 150K/sec is a severe restriction; 300K/sec is going to make a hell of a lot of difference. At the moment we can just about handle a three-way branch, if you try to go up to four it's getting a bit iffy. We could have four branches but we'd probably have to drop the frame rate after that junction because the CD's got to load another set of data. It'll solve itself as the hardware gets more sophisticated.'

Edge Is CD really the way forward?

JG 'I can't see any way other than CD. Consoles are all very well but I suspect they'll end up going the same way as the Spectrum. The medium of the future has to be CD – the only thing we've got to watch is we don't say we've got 600Mb of storage space, let's bung anything on there and sod the game: that's the biggest danger.

'People are gonna think, you buy a CD, and you want 500Mb of game. When

Continued next page



Photograph: Adrian Ford

The brains, ideas and marketing muscles behind *Microcosm*: (left) lead programmer John Gibson; (right) conceptualist David Worrall, and (centre) licensing and liaison manager Ian Grieve

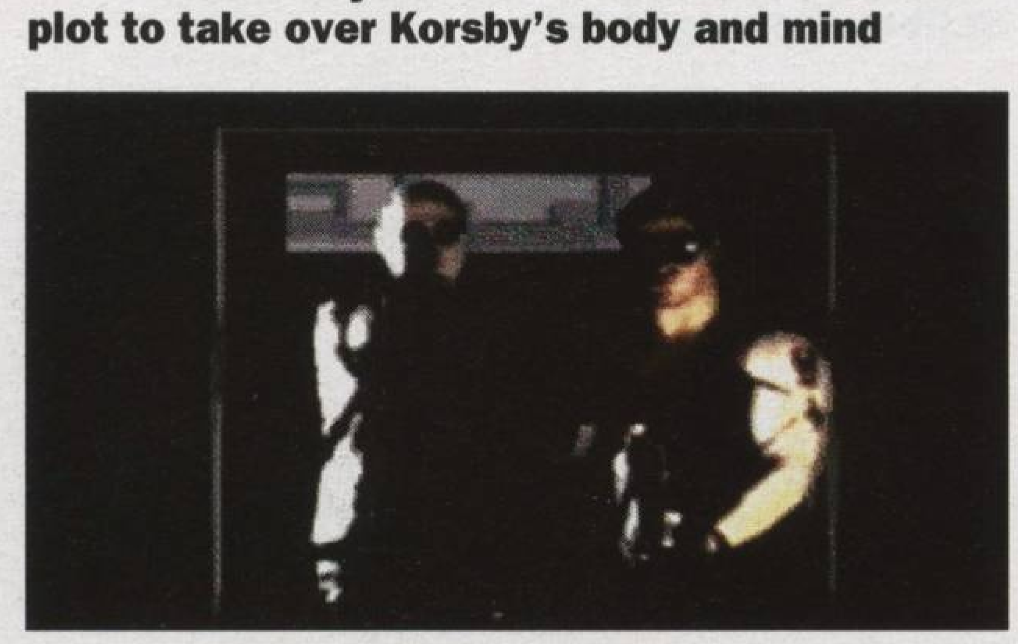
18 **Lee Carus-Westcott (left) and visualiser Jim Bowers play the bad guys; Japanese actors spoke lines dubbed on later**



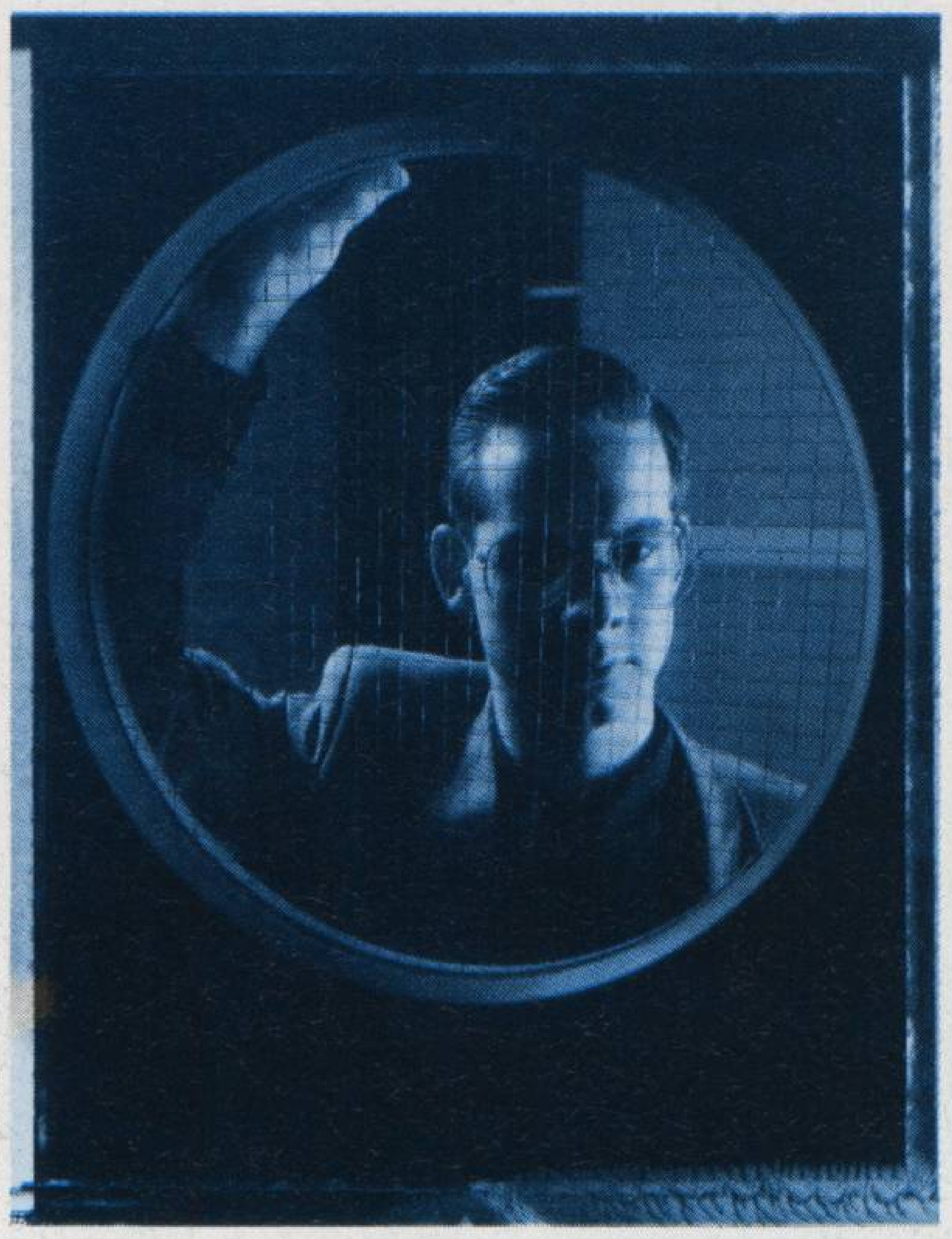
19 **In case Dr Knowles chickens out, Axiom have provided some persuasion: Neil Thompson and Mike Waterworth get heavy**



20 **The door opens and the baddies spin around: Cybertech have discovered the plot to take over Korsby's body and mind**



techview: CD-ROM



Photograph: Adrian Ford

Richard Browne, designer and producer of *Microcosm*, through the round window

'With so many ideas, the big problem was bringing it all to an end'

Richard Browne, designer/producer

Continued

in fact a really good game can probably fit in a single meg. If we did it as a two floppy game on the Amiga, it would have five levels, but it's a CD product so it has 200 levels. A good game doesn't have to have lots of graphics and lots of sound, but a good game can be enhanced by them.'

Edge In that case, how big is *Microcosm*?

JG '*Microcosm* totally filled a CD up. Obviously there's quite a bit of audio on there as well, which is just played like an ordinary CD. The sound effects are totally separate, they're data just like any other data that's loaded off the CD.'

Edge How much of **Rick Wakeman**'s music is there?

JG 'There must be something like 200-250Mb of music. There are eight tracks, and they're all about a minute each, and the intro's about three minutes, so there's about 12 minutes of audio in there.'

Edge Just how does the CD music know when to play?

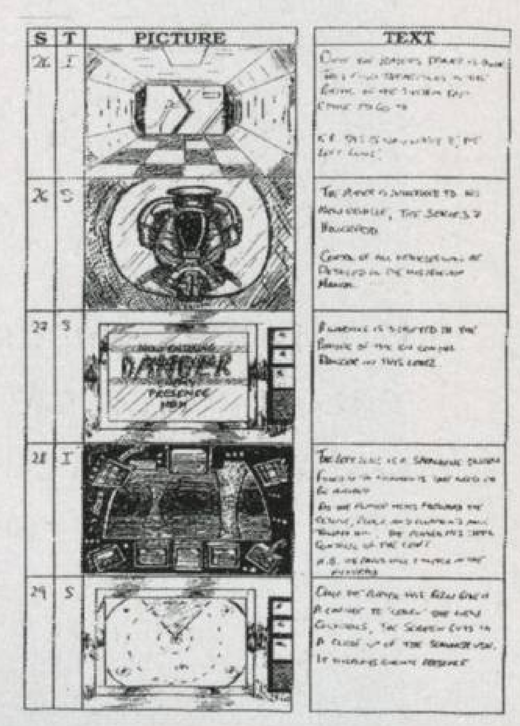
JG 'It's all synched: for example to play an audio track, you tell the CD to seek to where the audio track is and sit and wait, so when you get to the point in the game where you want it to play, it can start straight away. And then you either let it play until it's finished, or you can tell the CD: forget the audio track, go back into data mode and start loading files again.'

Edge End-of-level bosses are all rendered films, so what happens if you kill the boss before the film has finished running?

JG 'The obvious way to do it is just play a film and when you get to the end you say, have you hit it enough times? Yes you have, he dies; no you haven't, so you die. But it doesn't have to work like that: there's a facility within the core program to get to anywhere in the film, stop and restart somewhere else. It does take a bit of time because you've got to tell the CD to stop what it's doing and go off and seek somewhere else. There's a certain delay there, so we bring up some simple flashing screen to cover the fact that we're killing time while the CD's trying to find the next film – something like the player's face that can be stored in memory all the time and then just shoved into the video RAM when it's needed.'

Edge For you, what's the best thing about *Microcosm*?

JG 'I was pleased that it all came together. Having five programmers, half-a-dozen artists and a couple of musicians all working together is a relatively new thing – certainly in this country anyway. And the fact that it all came together, I think that is the greatest achievement. Some of the guys that programmed it hadn't been near a Towns before, and some of them hadn't even programmed the 386 chip before *Microcosm*. And yet they did a damn good









Every detail of *Microcosm* was documented in detail before work began. Designer Richard Browne's storyboard (*top left*) runs to 46 pages and, as you can see, the game sticks pretty closely to it. On entering the first waystation, you proceed along the neon-lit corridors (*top right*); where you are introduced to the series 7 hoverpod (*bottom left*); before entering the left lung to battle enemy ships while avoiding the filaments that litter the lung cavity (*bottom right*)

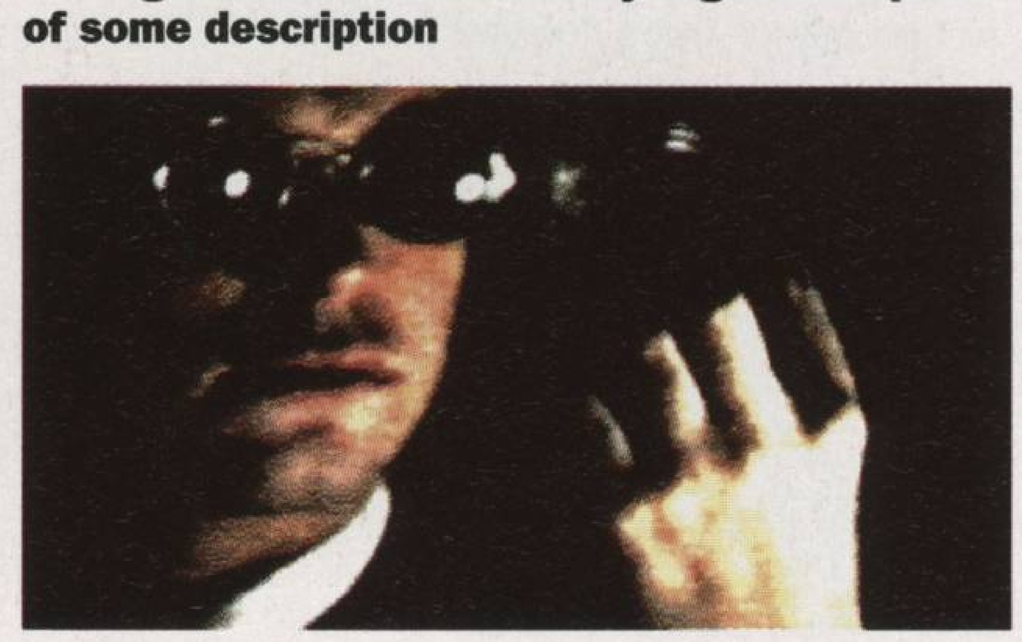
21 **Cybertech's security troops have arrived, and Axiom's men are cut down in a hail of fit-enducing gun fire**



22 **As Cybertech's men examine the debris, the executive officer's foot clinks against something on the floor**



23 **Paul Franklin, for it is he, picks up the glassware – there's a syringe and a phial of some description**



job of it because they didn't have to do all the low-level stuff, that was all done for them. So from my personal point of view, the greatest achievement in the game is the fact that it all actually works!


Photograph courtesy: Psygnosis

Ian Heatherington, MD of Psygnosis


Photograph: Adrian Ford

The *Microcosm* team: (back row, l to r) Mike Anthony, Jim Bowers, Paul Franklin, Stuart Sargusson, Simon Moore, Nick Burcombe, John Harris, Garvan Corbett. (Front row, l to r) Nicky Carus-Westcott, Mike Clarke, John Gibson, Lee Carus-Westcott, Mike Waterworth

Despite their stunning graphics, both Psygnosis' *Microcosm* and the Mega CD version of *Dracula* have been criticised for simplistic gameplay. **Edge** suggested to **Ian Heatherington**, joint Managing Director of Psygnosis, that the first CD titles were 'all show and no go'.

Ian Heatherington 'When we produce a new product, something like *Microcosm*, technologically it's very state-of-the-art. But it's being manufactured effectively to go on something like the Mega CD. The Mega CD player is a *Sonic* player, a *Mickey* and *Donald* player. With an inexperienced gamesplayer, you cannot afford to present radical gameplay options.

'It's no good going along with a *Monkey Island 2* or a super-sophisticated role playing game – this is not an interactive movie: this is a videogame. It's engineered as a videogame, it plays like a videogame – that's all it was ever intended to be. What we're trying to do is bring cinematic technology techniques to the videogame experience. If that was our objective, then we've been successful.

'*Microcosm* and *Dracula* are targeted at the existing marketplace on CD. In some ways I'm pre-empting criticism of the product: because people look at it and because it looks so wonderful, they probably expect more from it. It's not actually meant to deliver more.

'We're also doing things like *The Last Action Hero*. We're now a member of the Sony group – that's for a lot of reasons; we need access to intellectual properties in a privileged way. But within the concept of: 'Here's an intellectual property, buy the licence, develop the game in six months, and do the best you can', you cannot be technically innovative; it has to be formula-driven because the most important thing is time; nothing else matters. So the process defines the output, unfortunately.

'What we've got is something like 40 man-years' of experience in producing these games. We have the technology, we're on all the CD-ROM formats: we even know about a few that you don't know about yet.' [**Edge:** *don't count on it.*]

Edge Are you happy with *Microcosm*?

IH 'I think *Microcosm* has defined state-of-the-art. If you ask any creative person, are you happy with what you've produced, well no they're not; they never are. And that's what drives them.

'But with what we've learned from our experiences to date, we can go on and make some really staggeringly good products.'

Credits

Graphic visualiser:	Jim Bowers
3D animator:	Nicky Carus-Westcott
3D animator:	Garvan Corbett
3D animator:	Paul Franklin
2D animator:	John Harris
2D animator:	Colin Dempsey
Lead programmer:	John Gibson
Programmer:	Kenny Everett
Programmer:	Simon Moore
Programmer:	Mike Anthony
Programmer:	Andrew Toone
Visualiser:	Nick Burcombe
Visualiser:	Neil Thompson
Music:	Rick Wakeman
Sound effects:	Kevin Collier
Sound effects:	Mike Clarke
Utilities:	Stuart Sargusson
Concept:	Paul Frewin
Concept:	David Worrall
Designer/producer:	Richard Browne
Project manager:	John White

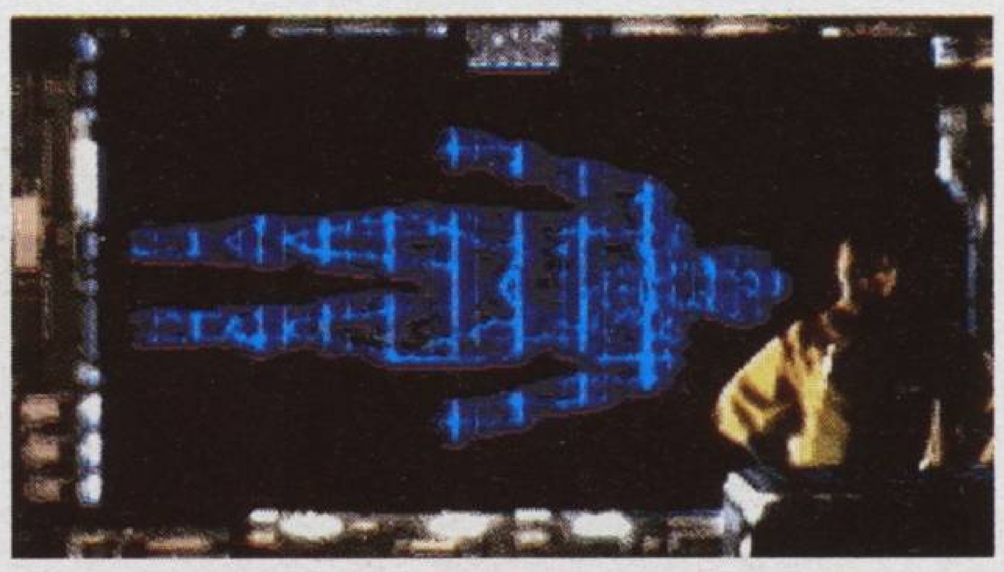
24 **Too late: Axiom's miniaturised devices have been injected into Korsby. Axiom now control the head of the head of Cybertech**



25 **Enter Jeff Bramfitt playing one of Cybertech's top brass. He explains the mission you are about to embark upon**



26 **Piloting a miniaturised craft, you must battle through Korsby's body and destroy all of Axiom's implants. Game on...**




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Testscreen

Testscreen is the part of the magazine where **Edge** reviews and rates the biggest games from each month.

There are two sections to Testscreen: the reviews themselves appear on pages **82-88** – this is where **Edge** passes comment and awards a rating out of ten. And, unlike other magazines, when we say five, we mean five: this game is strictly average. Anything above is good and getting better; anything below is bad and heading for crap. Simple.

Then, the higher rated – or simply more interesting – games earn a place in our showcase (pages **90-107**). Here, **Edge** can go into more detail about the gameplay, the levels, the bosses – and it provides space for bigger screenshots.

This issue is something of an oddity: the best titles are either sequels or remakes of *very* old games. Not exactly state of the art, but for unadulterated gameplaying excellence, they can't be beaten. Nostalgia, eh?



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Viewpoint supplied by: **Zapp Tel: 0532 590077**



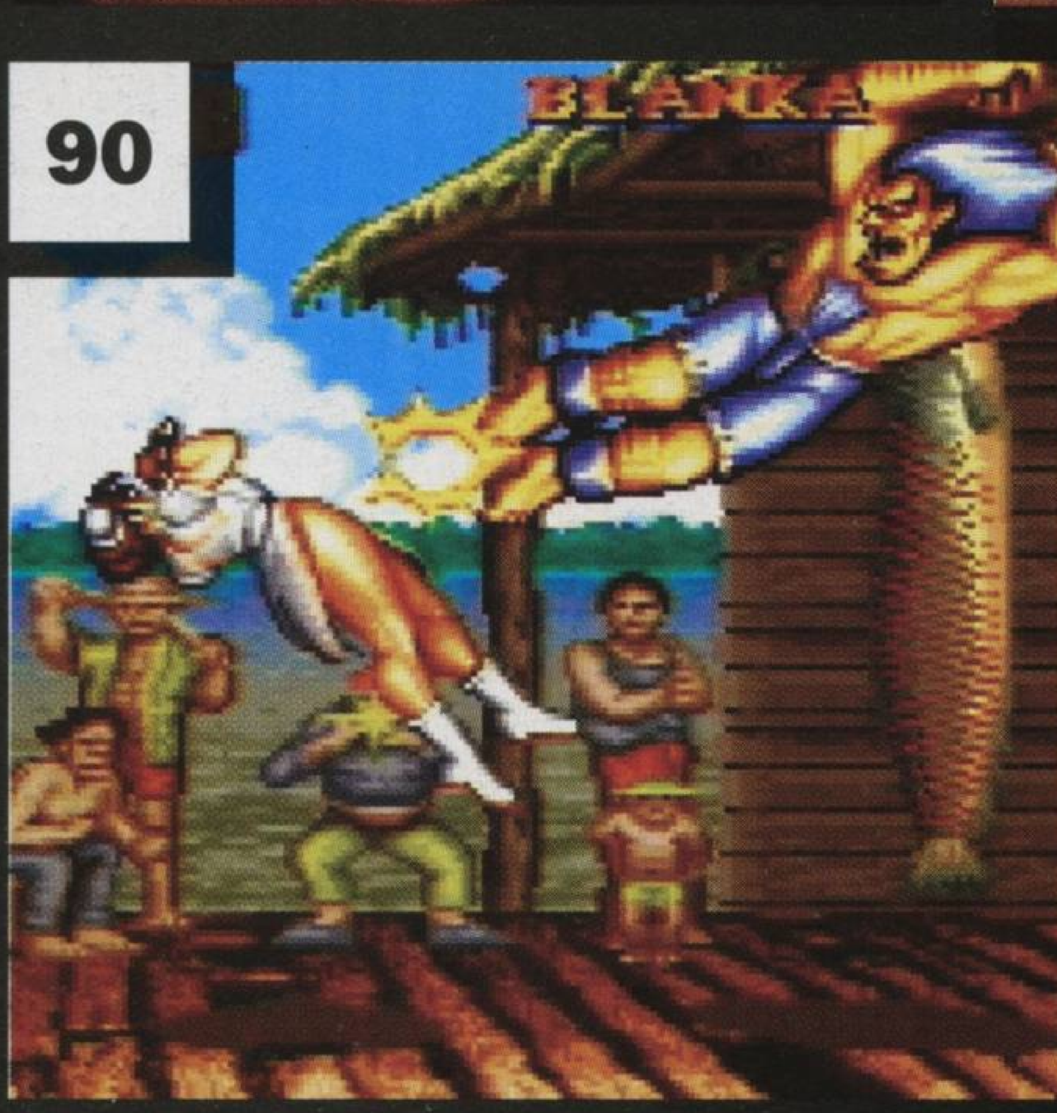
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testscreen

Game: **SFII Turbo**
Format: **SNES**
Publisher: **Capcom**
Price: **£90 (Jap import)**

The prayers of *Street Fighter II* devotees have at last been answered. This latest version of *Street Fighter II* contains both Championship gameplay, and a Turbo edition with four speed settings (plus six hidden ones), ranging from 'pretty quick' to 'ludicrously rapid'.

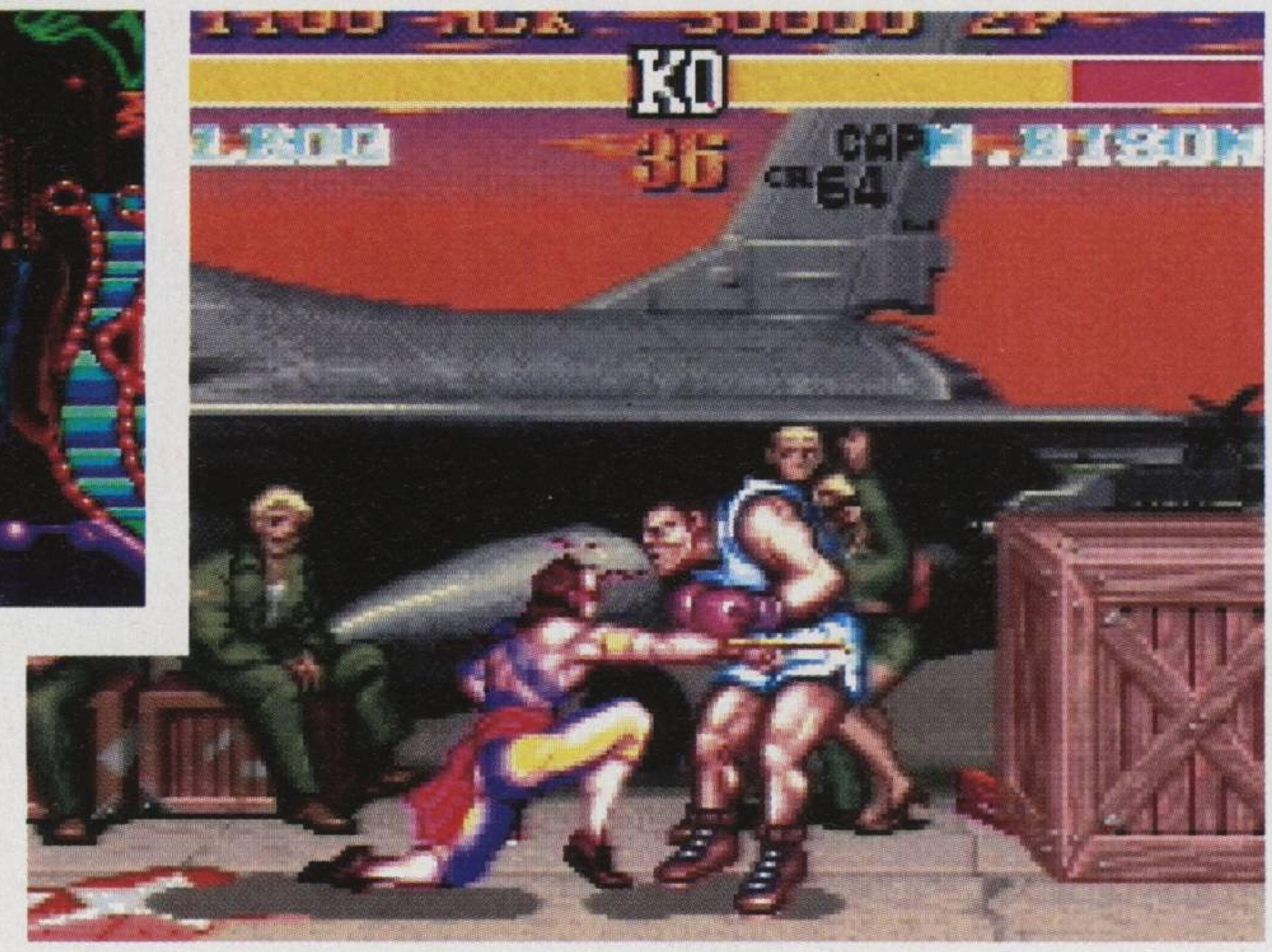
The Turbo game also contains the long-awaited new moves, such as Chun-Li's fireball or Ken and Ryu's mid-air hurricane kick, and has tweaked some of the old moves so that they're longer and harder.

In both versions, there are new frames of animation, the backdrops have had a fresh coat of paint, and there's extra sampled speech. But not all the changes are for the better: the option and character screens aren't as slick, and the game doesn't look quite as polished.

However this is small potatoes compared to the improvements to the gameplay. There can be few *SFII* players who won't welcome four new characters, new moves and a massive injection of speed.



Vega relies on cunning and guile to defeat Sagat... sort of



At last: real, proper two-player boss-on-boss action without resorting to Game Genie or Action Replay codes that turn their faces blue

You can see why Sega were less than happy to see a Turbo edition appear on the SNES before the Mega Drive has even had a taste of the six-button beat 'em up. God knows what Capcom are doing to appease the Sega management: it's quite possible MD *SFII* will include all the versions so far *and* have new characters and backdrops. Until then, this is the ultimate beat 'em up: no other has the same characters or moves – or the sheer finger-aching, mind-numbing gameplay.

If you own SNES *SFII* it's still a tricky decision whether you should buy *Turbo*: at current import prices, probably not.

But if you've yet to be introduced to the genteel art of street-fighting, and have a few pounds to shed, *SFII Turbo* is the one to get.

Edge rating: **Nine/10**

Game: **SFII Champion Ed**
Format: **PC Engine**
Publisher: **NEC**
Price: **£85 (Jap import)**

Quietly, without all the hype surrounding the SNES and Mega Drive versions, the PC Engine *Championship Edition* has entered the street-fighting arena. The hardware may well be six years old, but it can still hack it when it comes to fast gameplay. With a few concessions, primarily in the sound department, PC Engine *SFII* is pretty much identical to the SNES version. None of the gameplay has been compromised whatsoever – there's all the same characters and moves (hell, there's even an extra rock on the floor in Chun-Li's stage).

Because it's the *Championship Edition*, you get to play all four bosses, and all of the bonus stages are included – no missing out the barrel section like with SNES *SFII*. And on the gameplay front there's little else to say. It plays as well as you'd expect; there are few unpleasant surprises and it very much comes down to personal preference, whether you like your hard kick and punch buttons on the front of the pad (SNES-style) or taking up a pair of buttons on a six-button pad.

PC Engine *Street Fighter 2* supplied by **Console Concepts**: 0782 712759



Kindly old Zangief adjusts Balrog's belt (and no it isn't Vega: this is a Japanese version with the *correct* names retained, thankyou for asking)

These flaming Chinamen don't half get under your feet...





And you can just imagine the sort of noise *that* made

And this leads us to the real problem. Having coughed up the cash for your card, you now realise that to play head-to-head you need to get a two-player adaptor and two six-button joypads. Suddenly, this is starting to become an expensive hobby.

Apart from a few patchy graphics the disappointment is in the sound. The sampled effects are coarse and the tunes are sub-Bontempi standard. A Super CD version would, of course, overcome this problem – Capcom please take note.

Edge rating: **Eight/10**

Game: **Mortal Kombat**
Format: **SNES**
Publisher: **Acclaim**
Price: **£60**



***Mortal Kombat*'s special moves are at least varied: Sub-Zero has the ability to freeze his opponents, in readiness for a pummelling**

Scorpion reels Kano in to give him a kicking at close quarters

Mortal Kombat's huge 16-megabit cartridge is filled with the backgrounds, digitised sprites, oriental tunes and samples so familiar to fans of the coin-op. But the one feature that made it a hit in the arcades hasn't made the transfer: there's no mutilation, no blood, and no external, internal organs.

Apart from that, the home console versions are graphically spot on – the sprites look good and the animation is excellent.



Sonya hits Raiden with the dreaded 'Song For Europe'

Midway's arcade original gave you stylish ultraviolence and special death moves to 'finish' your opponent. Tired of fighting? – then why not just tear off the other guy's head or rip his heart out? *Mortal Kombat* pulled no punches in its effort to dethrone *SFII*.

Explaining the changes made to the SNES version, Acclaim's European boss Rod Cousens denied rumours that Nintendo disapproved of the violence, instead saying that the SNES version wouldn't be as violent as the Mega Drive due to 'restraints of hardware' – ie The SNES's state-of-the-art 16-bit console couldn't do the gory graphics. Good one, Rod.

But does the cleaned-up *Mortal Kombat* look right? Or has the reduction in gore literally ripped the heart out of what was a great arcade game?

Well, Acclaim has certainly captured the look of the coin-op – the sound and graphics are excellent – but the lack of blood 'n' guts goes a long way to reducing what gave the game its weird appeal in the first place. Without the gory punchline, this joke just isn't funny.

Some people will have you believe that *Mortal Kombat* is the new 'king of beat 'em ups', but that distinction is definitely held by *SFII Turbo*, whose variety and sheer playability far outstrips *Mortal Kombat*'s limited appeal. **E**

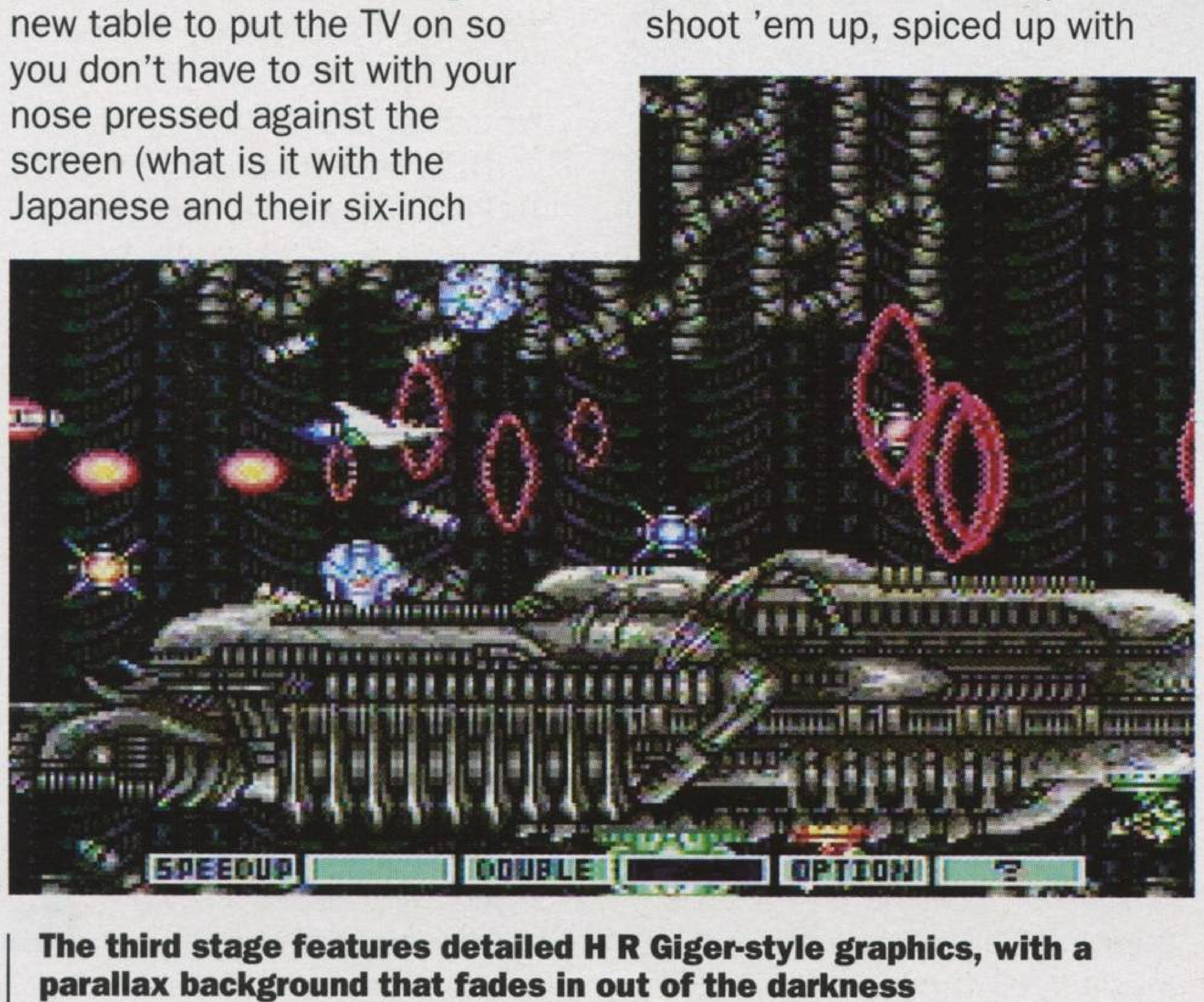
Edge rating: **Six/10**

Game: **Gradius II**
Format: **PC Engine CD**
Publisher: **Konami**
Price: **£60 (Jap import)**

So there you are. You've invested £300-odd in a brand-new grey import PC Engine CD, you've bought a new table to put the TV on so you don't have to sit with your nose pressed against the screen (what is it with the Japanese and their six-inch joypad leads?), you've scoured the ads to actually find yourself a copy of a game to play on it, and what have you come up with. Oh great, *Nemesis* again. Hardly the state-of-the-art, is it? A 1985 coin-op shoot 'em up, spiced up with different levels, but with the gameplay more or less unchanged. The words 'money', 'waste', 'complete' and 'of' spring to mind.



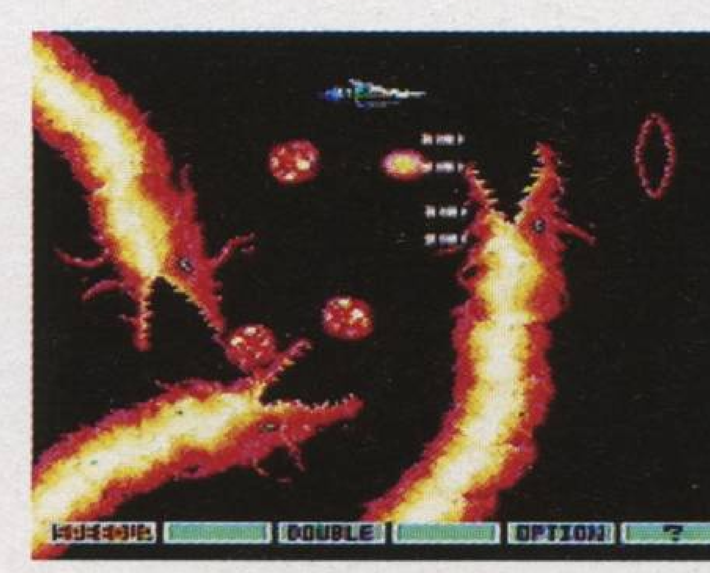
Fire and ice: blasting through the iceberg stage with shields on



The third stage features detailed H R Giger-style graphics, with a parallax background that fades in out of the darkness

But wait. *Nemesis* (or *Gradius* if you really must) was a truly groundbreaking shoot 'em up, and a brilliant one at that. This game is actually a version of *Vulcan Venture*, the third coin-op in the *Gradius* series, and it comes complete with the flaming fireball planets and colliding iceberg sections. Many of the levels will be familiar to anyone who's played SNES *Gradius III*, but they're all the better for a lack of slowdown. (There is slowdown, but bizarrely only early on when the big venus flytraps appear.)

The only bugbear here is the slightly uneven difficulty – even on Easy, it's terrifyingly hard at the end, and if you get killed (as you will), your chances of building up power-ups and making more progress are slim. But maybe that's just encouragement not to get killed.



First stage and already you've upset the flame dragons

The whole thing is topped off with some fabulous CD sound, using Roland's Sound Space system which, if you play with headphones on, gives you a truly frightening surround sound experience. The music and speech is great, and the whole thing's still more fun than practically any other shoot 'em up on any other system. It won't win many technical awards, but for gameplay, you can't do much better than this. **E**

Edge rating: **Eight/10**

Game: **Silpheed**
Format: **Mega CD**
Publisher: **Game Arts**
Price: **£60 (import)**

So, the game Mega-CD owners have been eagerly waiting for finally touches down.

Does it live up to the hype and high expectations? Well yes, sort of. There's no doubting *Silpheed*'s graphical excellence – from the moment the logo appears, you know you're in for a visual treat.

Moving at 60 frames a second, the animation is smooth and at times, the views are breathtaking.

The action is split into 12 levels, increasing in difficulty, and culminating in a space battle with a huge mothership.

Your ship, the SA-77, is very manoeuvrable, but it doesn't interact with the backgrounds as much as anticipated – the backgrounds act like, well, backgrounds. Some levels do require you to fly through canyons and over spacestations, but you'll soon wish that you had more control over the craft.

Fans of the coin-op *Galaga*, will feel right at home in *Silpheed*, as swarms of aliens fly in formation at and around your craft.

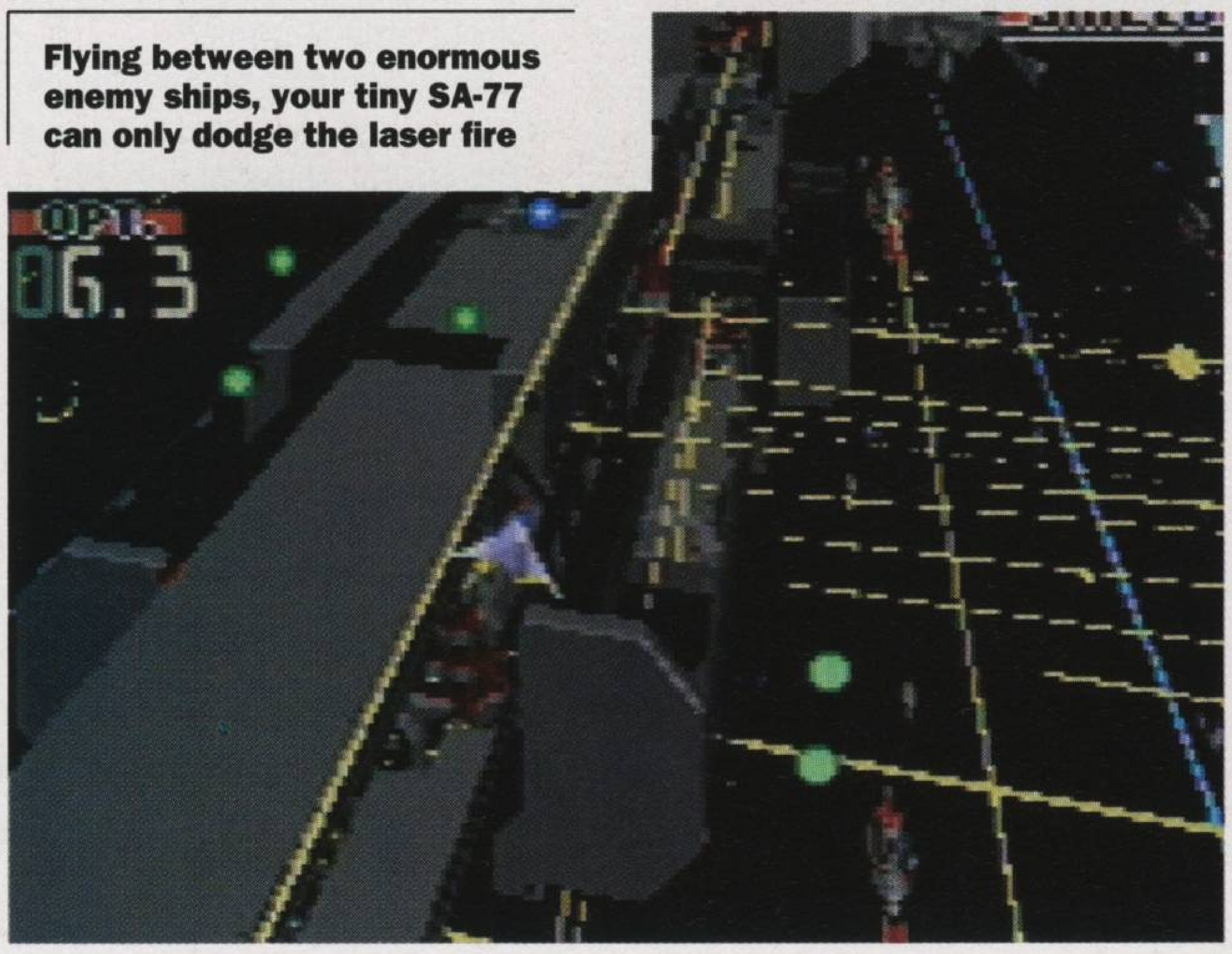
Comparisons with *Starfox* are sure to be made – beyond the obvious similarities, both use polygon-generated graphics. Although *Slipheed* is graphically superior, *Starfox* is more involving, and its bosses far outshine the pathetic motherships in *Silpheed*.

But Mega CD owners need fear not – *Silpheed* is still a good game. Although relatively easy, it's nice to look at and plays fairly well.

Let's hope Game Arts can engineer some gameplay to match their advances in 3D visuals in time for the launch of *Silpheed 2*.

Edge rating: Seven/10

Flying between two enormous enemy ships, your tiny SA-77 can only dodge the laser fire



Full power-ups and shields, but still there's the boss to fight





A hostile enemy convoy. Keep your head and you'll make it...

Game: **Inca**
Format: **CD-i**
Publisher: **Coktel Vision**
Price: **£39.99**

Inca is yet another release for Philips's CD-i system. But this isn't a bad effort, surprisingly. The machine's most interactive product to date, *Inca* could be the sign of things to come. Warmly received on a host of 16-bit machines, it looks set to enjoy some form of success, even on the CD-i.

In the game you play the part of Eldorado, and your task is to locate three great Inca powers: time, matter and energy, by travelling through space. *Inca* relies heavily on its puzzle element, and is definitely a tough game. Some of the puzzles are relatively straightforward, but most require a great deal of lateral thinking before they are solved and you can move on.

The puzzle sections are nicely interrupted by first-person action scenes, including excellent 3D space travel and shootouts with digitised actors.

Graphically *Inca*'s a bit of a mixed bag. Some scenes look great, and some look great until they start to move. Sound is impressive, but there again, this is a CD product, so anything but 'impressive' would be disgraceful.

The main problem is moving around the game. You use a cursor throughout – and cursor-controlled games can be fiddly at the best of times, but this problem is made worse in *Inca* because of the awful controller with the CD-i.

Presentation is great and the whole package hangs together well. If you're expecting a fast-paced action adventure, *Inca* will leave you disappointed. But for gamesplayers wishing to exercise their little grey cells, *Inca* could prove a worthwhile purchase.

Edge rating: Seven/10



***Inca*'s intro sequence, in which the story is explained to you by animated figures inside a transparent golden ball. Very realistic...**



in level one your task is to catch and destroy the enemy ships before they escape

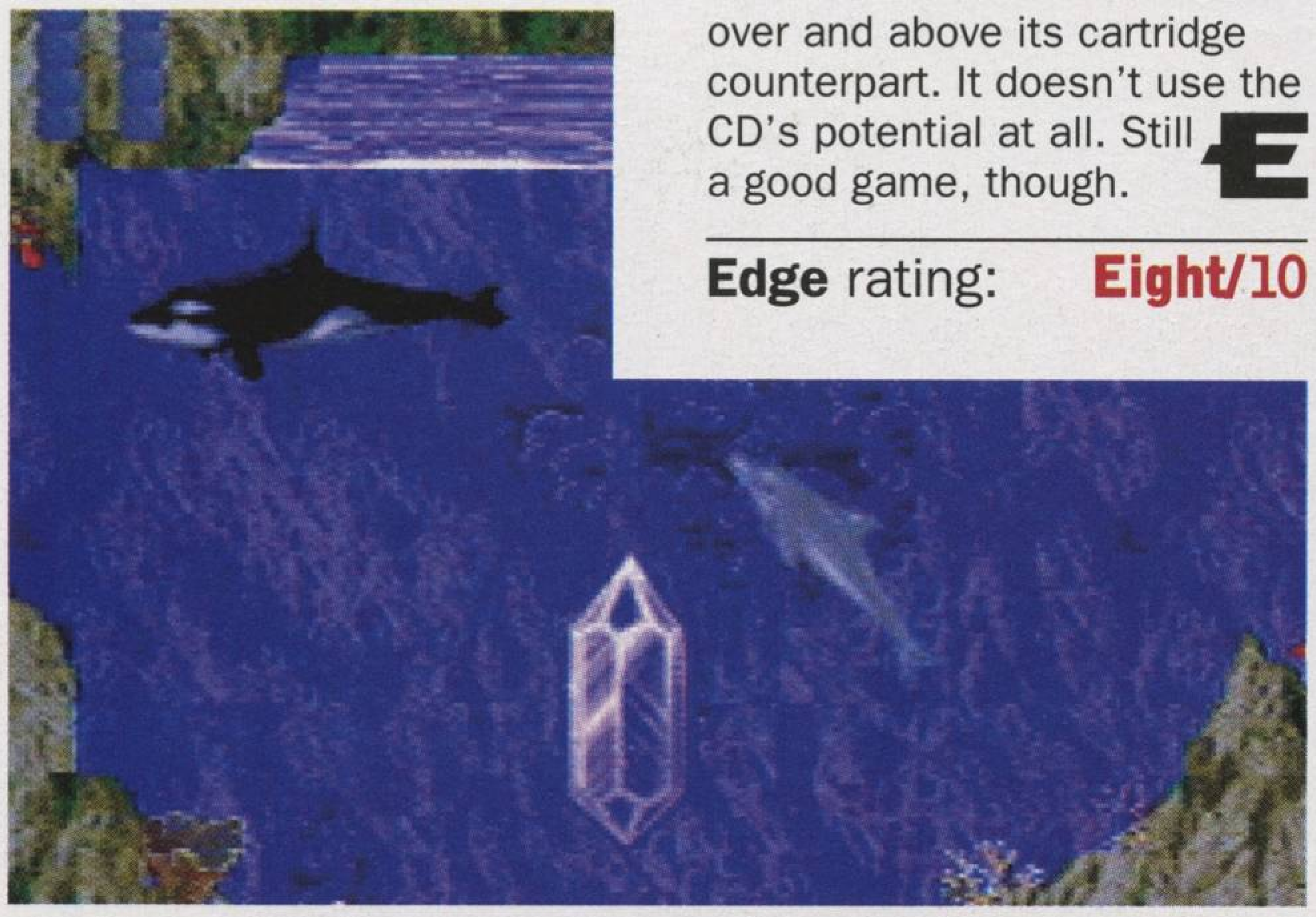
Game: **Ecco the Dolphin**
Format: **Mega CD**
Publisher: **Sega**
Price: **£50**

When it appeared on the Mega Drive early this year, *Ecco* wowed the punters with its enchanting graphics, slick animation, atmospheric soundtrack, and above all, its non-violent theme. Now the Mega CD version is upon us so we're forced to question what it contains that justifies its existence on a CD.

The answer is, not an awful lot. The first improvement is the addition of five extra levels. You also get QSound.

But the Ecco CD offers little over and above its cartridge counterpart. It doesn't use the CD's potential at all. Still a good game, though.

Edge rating: **Eight**/10



By hitting the crystal with his sonar, Ecco can converse with the killer whale. What you can't see is the wonderfully mellow CD music

Game: **Lands Of Lore**
Format: **PC**
Publisher: **Virgin**
Price: **£36**

What is it about RPGs, for goodness sake? Why are there so many of them on the PC, and why are they mostly tedious?



One of *LOL*'s animated scenes. Here a wizened King talks to his courtiers

You only need to hear the title to know that *Lands Of Lore* is an RPG, but then you'd expect that from Westwood Studios – the people behind *Eye of the Beholder 1* and *2*.

In fact, at first glance you could be forgiven for thinking that *LOL* is another *EOTB*. There's the familiar forest, viewed from first person perspective; there are the brave heroes who only seem to walk in short bursts of exactly equal length; there are the cinematic cut-scenes.

Westwood have honed their RPG model to a tee now, and frankly *LOL* is a joy to play. It has an automap. It doesn't rely on tedious statistics which have no bearing on gameplay. It doesn't bother with weight limits, hunger or any of that realistic (ie annoying) stuff. Although at first it seems too easy, like you're simply being led through the game not playing it, it doesn't stay that way.

Lands Of Lore doesn't break any new ground, but for an RPG you'd be hard pressed to do better.

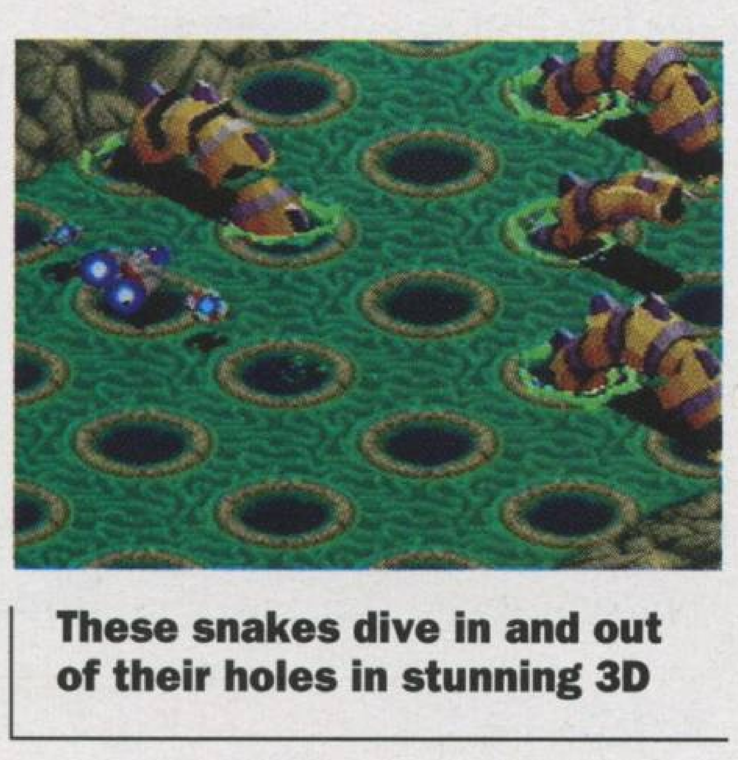
Edge rating: **eight**/10

Game: **Viewpoint**
Format: **Neo Geo**
Publisher: **Sammy**
Price: **£225**

Again, this is another massive megabit title, but for once you can see where the memory has gone. Every single sprite has been rendered in 3D, predrawn and stored in memory. And the result is stunning: every creature, gun emplacement and missile looks like a solid 3D object: serpents dive in and out of the water with breathtaking realism, and the huge bosses are just stupendous.



Destroy the giant crab's claws and its brain comes out to play



These snakes dive in and out of their holes in stunning 3D

So much for aesthetics: what of the gameplay? Ah, this is where things fall down slightly. When all said and done, *Viewpoint* is still just a shoot 'em up, and not a particularly innovative one at that. Later bosses are stupidly hard to destroy and merciless restart points take you miles back into the level.

It has an addiction born of frustration and of the desire to see the graphics, but there's a high price to pay... and that's the inordinately high price you have to pay.

Edge rating: **Seven**/10

Game: **Sunset Riders**
Format: **Super NES**
Publisher: **Konami**
Price: **£45**

One of the harder sections is this horse-riding bit...



With such dated gameplay *Sunset Riders* has a job making the grade – but it manages it. Just.

Whether it's the much underplayed wild west scenario, or the change of perspective that crops up throughout, it's a satisfying shoot 'em up packed with detail and a variety of solid gameplay. From the great intro, the graphics emulate the arcade game well – far better than the rather unspectacular Mega Drive version – the sprite handling and overall speed of the game never lag at all. If there is anything to moan about it's the lack of room for manoeuvre, with only a single plane for the player, and some annoying horse-riding bits where there's little chance to avoid what's coming.

For action this isn't a match for Capcom's old wild west classic *Gunsmoke*, but it's still great fun, and has amusing western music and speech thrown in, too.

Edge rating: **Seven**/10

testscreen

Game: **Gunstar Heroes**
Format: **Mega Drive**
Publisher: **Sega**
Price: **£39.99**

Gunstar Heroes comes on a eight-meg cartridge, and features some of the fastest simultaneous two-player action you're ever likely to see on the Mega Drive. The graphics have a distinct cartoon feel to them, the backdrops are well detailed and the scrolling is very smooth.

Your character shifts at an incredible pace as he jumps, hangs, and climbs his way through each of the five futuristic levels, reaping death and havoc on just about anything that moves.

You have the choice of four weapons: lightning fire, force fire, chaser fire, and fire fire. Each weapon has its own strengths. Lightning fire is great for longrange attacks but not so good for closeup action, chaser fire homes in on the enemy and is a good allround choice, force fire sends out an unending stream of bullets, and fire fire is basically a flame thrower, designed for closeup mass destruction.

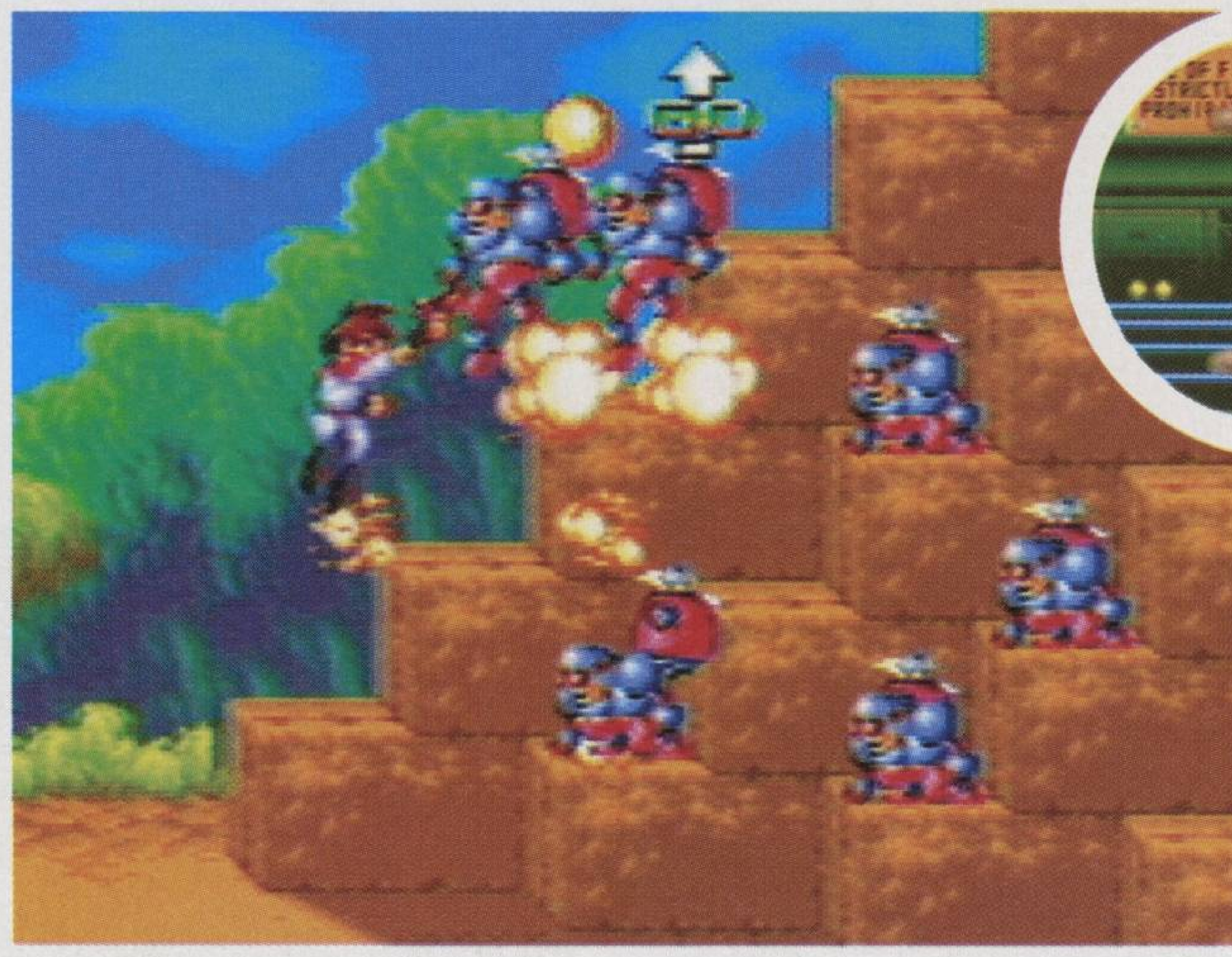
You can only carry two weapons at a time, but they can be joined to form a totally new weapon. For example, the flame thrower combined with force fire creates a longrange flame thrower – ideal for killing just about anything and everything.

Although five levels in the game don't sound a lot, each level is huge – and just when you think you've seen off the last guardian, another one appears. It's quite demoralising: after using all your weapons and resources to finish off what you thought was the last boss, you just get another one, bigger and meaner, to take its place.

The action never lets up – not for a second – and by combining many mid-level bosses with hordes of enemies, *Gunstar Heroes* quickly becomes an immensely hectic game.

It looks good, sounds good and plays well, but after completing the game, you get no great urge to return to it, even with two players. There are no hidden levels to find, no secret screens – you get what you see.

Gunstar Heroes is great while it lasts, but it doesn't last long.



These flying characters must be defeated to get beyond the end of level one. Our hero is using the flame thrower for close work



One of the bosses from the dice palace looms infront of you...

Edge rating: **Six/10**

Game: **Mario Collection**
Format: **SNES**
Publisher: **Nintendo**
Price: **£60 (import)**

Well, wonders will never cease. For once there's a Nintendo cartridge that offers something like value for money. With every rip-off merchant and his wife greedily eyeing the consoles it's nice, no, it's very surprising to see Nintendo pull a stroke like this.

Four Mario games, including the terrific *Super Mario Bros 3,* and, for the first time outside Japan, you get *The Lost Levels.*

Super Mario Bros and *Super Mario Bros 3* show what all the fuss was about, and what made Nintendo the biggest console manufacturer in the world. Both are very simple and have a superb learning curve. *SMB* is challenging, but *SMB 3* is amazingly complicated too, more so than the SNES *Super Mario World,* and still more playable. Both games are great, even if the sluggish controls of *SMB* feel funny next to *SMB 3.*

The Lost Levels is *Super Mario Bros* in different clothes – same gameplay but harder. Perhaps too hard, as even the first levels are impossible.

Super Mario Bros 2 is a real oddity: it lacks the fluid gameplay of the others and the levels are badly designed.

In all, though, a great cartridge, worth buying just for the two classic *Mario* games. There's one bad thing about it: if the best cart around is a compilation of old eight-bit games, it doesn't say much for the standard of new games, does it?



Best of the bunch, *Mario 3* is a superb rendition of the eight-bit NES title (which, incidentally, is the best-selling game of all time)

The Lost Levels in all its weird, never-before-seen glory





Mario takes to the air in the runt of the litter: *Super Mario 2*

Edge rating: **Eight/10**

Game: **Rainbow islands**
Format: **PC Engine CD**
Publisher: **NEC**
Price: **£60**

Shortly after the dawn of time, NEC Avenue announced they were to convert *Rainbow Islands* to the old CD-ROM 2 system.



Rainbow Islands on the PC Engine – one of the most delayed games of all time

What they forgot to mention was that it was going to take them about four years.

Even the sequel, *Parasol Stars*, managed to beat it, arriving on the Engine about two years ago. But to make amends, *Rainbow Islands* was always the stronger game of the series, (although ardent fans of the original *Bubble Bobble* might argue differently). Its playability and original gameplay features are still largely unmatched.

In many ways it's the definitive cutesy platform game. A Taito masterpiece. And on the Engine it's brilliant, with colourful graphics, flawless playability and even that terrible over-the-rainbow theme in 'glorious' Dolby Surround sound.

The only thing missing is the two-player option, oh – and things are spoilt a tad by some occasional slowdown. But apart from that, it's still the classic it always was. Well worth the wait.

Edge rating: **Seven/10**

Game: **Zombies Ate My Neighbors**
Format: **SNES**
Publisher: **Konami**
Price: **£45**

Zombies Ate My Neighbors wins the prize for daft title of the year. In the game your job is to save a set amount of neighbours from the clutches of the living dead.



Throw an exploding can, and you scatter the zombie things here there and everywhere

Zombies starts off well with smoothly scrolling colourful backgrounds plus great animated sprites. And using your pocket radar, locating and saving the neighbours is fun.

The game is full of nice touches, like the ability to rush into a neighbour's house and search their cupboards for useful objects that can be used as weapons – beer cans double up as grenades, for example. The music suits the game and the whole product is in the style of a 50s B-movie.

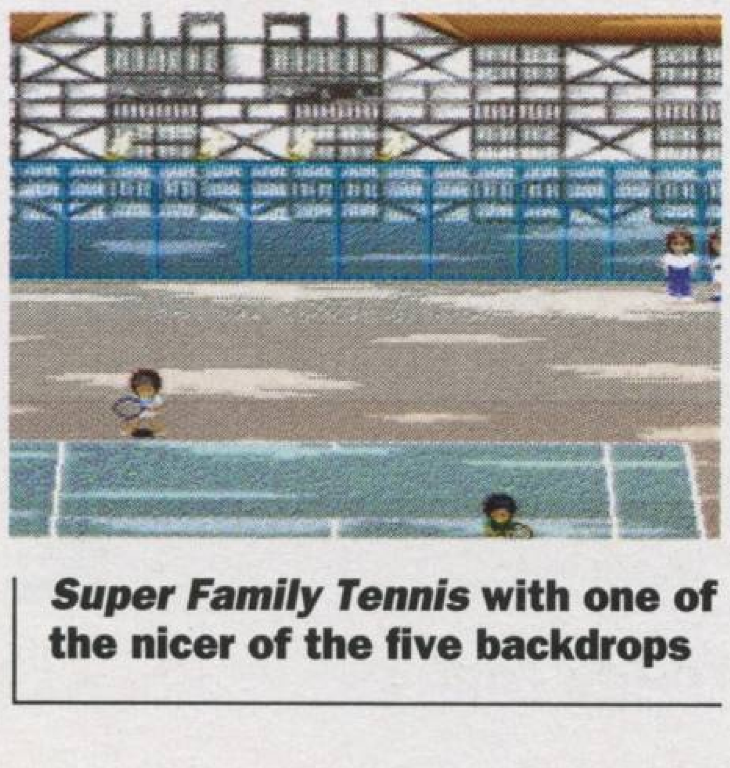
Even with two players, though, the action soon becomes boring, and your initial enthusiasm wanes fast. If there was more to it, *Zombies Ate My Neighbors* could have been great.

As it is, the different styled backgrounds and the addition of some end of level guardians does little to inject any life into what is basically a pretty dead game.

Edge rating: **Six/10**

Game: **Super Family Tennis**
Format: **SNES**
Publisher: **Namco**
Price: **£45**

Super Family Tennis is the official sequel to *Family Tennis*, a game that originally appeared on the Japanese Famicom. While it's good, it (and any other tennis simulation on the SNES) has the unenviable task of competing with Tonkin House's *Super Tennis*. But *Super Family Tennis* does have one distinct advantage over the Tonkin classic – it allows a fourplayer game.



***Super Family Tennis* with one of the nicer of the five backdrops**

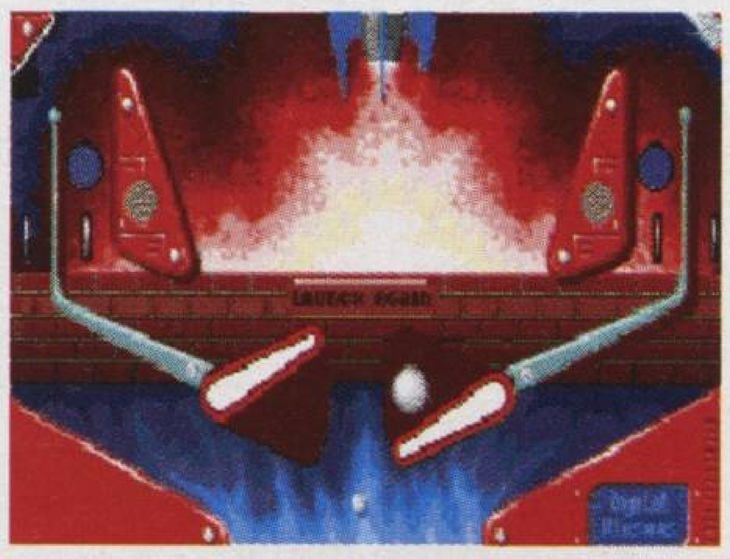
You get the normal tennis options, from the variety of players and courts, to the varying match lengths. But things quickly get weird: the courts are not your normal tennis courts: you can choose to play beside the seaside, complete with crashing waves – or you can have a game outside a far-eastern pagoda.

The game plays quite well in oneplayer mode, but the controls are not as intuitive as in *Super Tennis*. There's a distinct lack of shots, and the ability to pull off crosscourt passes is hampered by the dodgy control system. The game comes into its own when played with four players – the lack of shots doesn't detract from the fun to be had in multiplayer mode.

Super Family Tennis is a good, if not essential, purchase, especially for multiplayer fans. But Tonkin's *Super Tennis* is more playable and has added depth for one or two players.

Edge rating: **Seven/10**

Game: **Pinball Dreams**
Format: **PC**
Publisher: **21st Century**
Price: **£38**



The first and best of the tables in *Pinball Dreams*, called Ignition

Pinball Dreams was an amazingly polished product on the Amiga, proving that this game could be the most addictive computer-translated tabletop game ever. And it was one that spawned an equally professional follow-up, in the form of *Pinball Fantasies*.

But the big attraction here, of course, is the game scrolling just as fast and impressively on the PC as the original did on the Amiga. It's completely smooth on a fast machine, but you do need a fast graphics card, too.

Spidersoft have done a great conversion here, especially with the ball movement – it's brilliant and at times frustratingly realistic.

For some reason, though, the screen detail isn't as impressive as it was on the Amiga, with some cross-hatch shading letting things down ever so slightly in places.

And the sound really grates through a Soundblaster Audio card. It's like a Nirvana demo played through a Force 9 gale as heard by a deaf person in a noisy room. In other words, the samples are terrible: noisy and scratchy, and barely audible at normal volume.

But still, it's an unmissable game, and one of the best videogame versions of the desktop game ever created. A version of the sequel, *Pinball Fantasies*, is due out by Christmas.

Edge rating: **Eight/10**

testscreen

Game: **Rocket Knight Adventures**
Format: **Mega Drive**
Publisher: **Konami**
Price: **£40**

The current trend of cute-looking, but intrinsically hard characters continues with Konami's *Rocket Knight Adventures*. This shrew-like rodent is blessed with a missile-slinging sword and a rocket pack: if his weapon isn't enough to get him out of danger, he can power-up his pack and hurtle, meteor-like, across the screen.

Rocket Knight Adventures delivers a mixture of platform jumping interspersed with swift scrolling sections, so that – on your first few goes at least – you're never quite sure what's coming up next.

The game's jolly graphics belie a tour-de-force of technical excellence: impressive parallax-scrolling, palette switching, swirling heat-haze backdrops, huge multi-segmented enemies and a variety of clever graphical trickery – at one stage you can only see your target platform by its reflection in pool of lava below. Only when the lava swells up can you see where to jump. Devious, huh?

Gameplay is pretty much spot-on, with just the right amount of platform action and enemies, plus a nicely balanced difficulty curve. But sadly it sticks to the same old level-boss, level-boss structure (like nine out of ten Mega Drive games) so no marks for innovation there.

In typical Konami style, there are several difficulty levels, and on Easy you can slice through half the game in one go. But, if you can restrain your cheating tendencies, *Rocket Knight Adventures* provides a good blast and a neat twist on the aged platform theme.

Edge rating: Seven/10

In the arms race, your sword wielding rodent in a hoverpack looks like he's coming last



Don't you find rollercoasters all the more exciting when they're covered in spikes?





Against a swirling waterfall backdrop, R Knight swipes at a flame-throwing boss

Game: **Yo! Joe!**
Format: **Amiga**
Publisher: **Hudson Soft**
Price: **£27**

No veteran gamer needs telling that Hudson Soft are one of the best developers in the business, but they're not a name that leaps to mind in conjunction with the Amiga. Things are starting to change, though, with the release first of Amiga versions of *Bomber Man* (as *Dyna Blaster*) and *Bonk's Adventure* (as *BC Kid*) last year, and now this original platform game.

There's nothing especially new or clever about *Yo! Joe!* – it's half-a-dozen levels of pretty standard jump-around-and-hack-up-baddies fare, but the quality of execution is breathtaking. From the dazzlingly bright graphics to the fiendishly-designed maps and the clever use of power-ups, it's all done superbly, in a way that makes you want to play it again and again just to see what you can the next time round.

Maybe that's just as well, though – because *Yo! Joe!* isn't the hardest game you'll ever play. And then then infinite continues it gives you start to look like slightly less of a good idea.



As well as starring in a platform game, Joe also does a darn good Elvis impression



The quiffed-one strolls through some tidy scenery

Edge rating: Eight/10

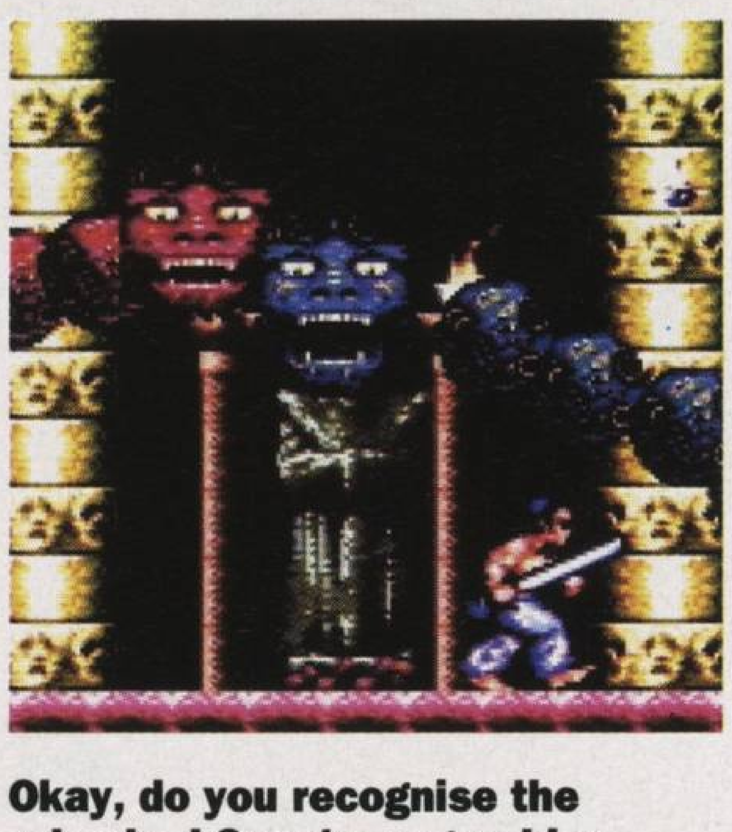
Game: **First Samurai**
Format: **SNES**
Publisher: **Kemco**
Price: **£45**

First Samurai is a two-year-old Amiga game that's just been converted to the SNES – but sadly, time hasn't been all that kind to this humble Amiga platformer.

It's weird, *First Samurai* is obviously one of those computer games that's tried desperately to be like a console game – with simple platforms and a slick and fast-moving main character – but now that it's finally made it onto the SNES it looks like a fish out of water.

Why is it that almost every computer-based platform game is slow and boring? All you have to do in this one is walk about the place, keeping a couple of monsters at bay and collecting a few things. But even this is done in such a textbook fashion that you'd probably have more fun reading the textbook.

If you've ever played *Exolon* or *Stormlord* on the Spectrum you'll recognise the gameplay (and some of the graphical effects) straightaway – the Amiga *First Samurai* was written by the same guy, **Raffaelle Cecco**, who did the old Spectrum greats. *First Samurai* really does feel like an old Spectrum game, which was no bad thing – five years ago.



Okay, do you recognise the rehashed Spectrum graphics, then? Look closely and squint...

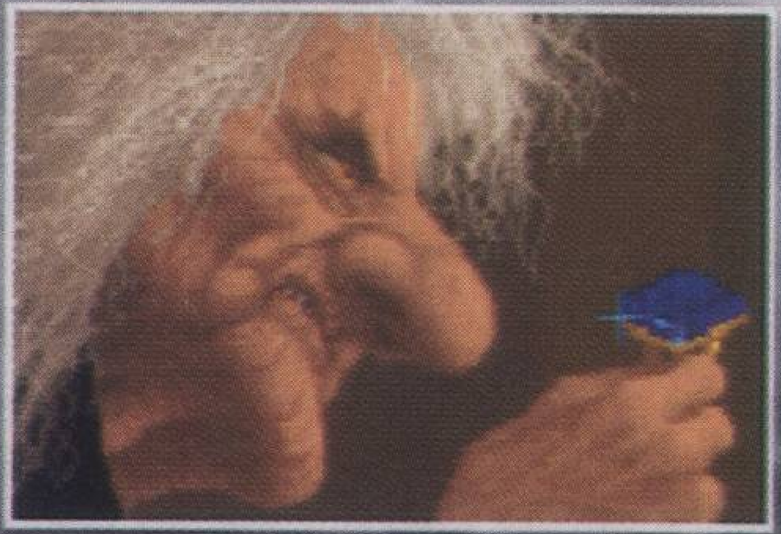
Edge rating: Five/10

LANDS OF LORE

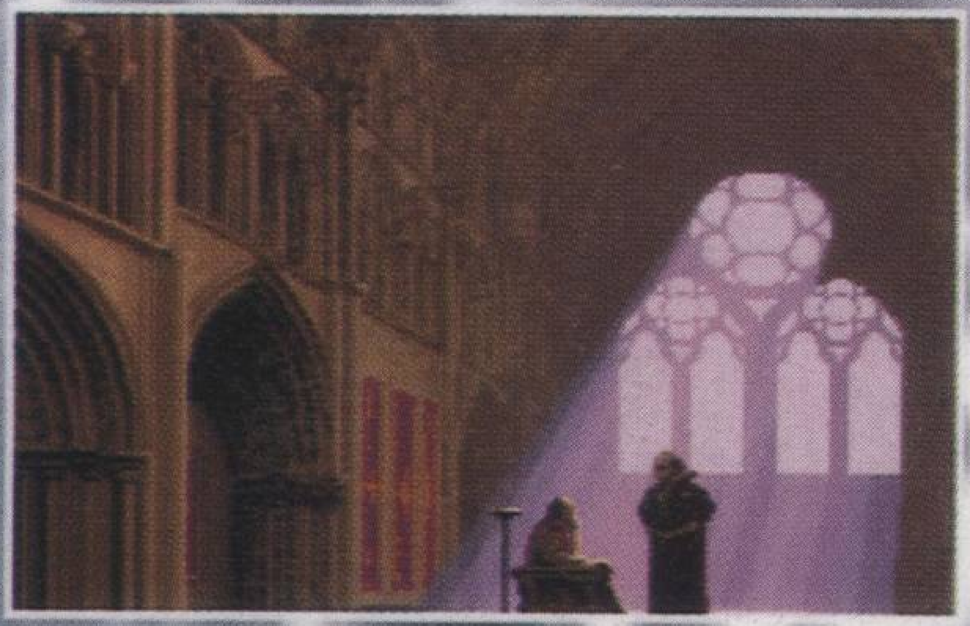
THE THRONE OF CHAOS

Legend has it that a Fantasy Role Playing Adventure like no other will come to pass. It will set new standards with its sheer scale. Its elaborate art, animation, discerning use of speech, and special effects will be talked about for years to come.



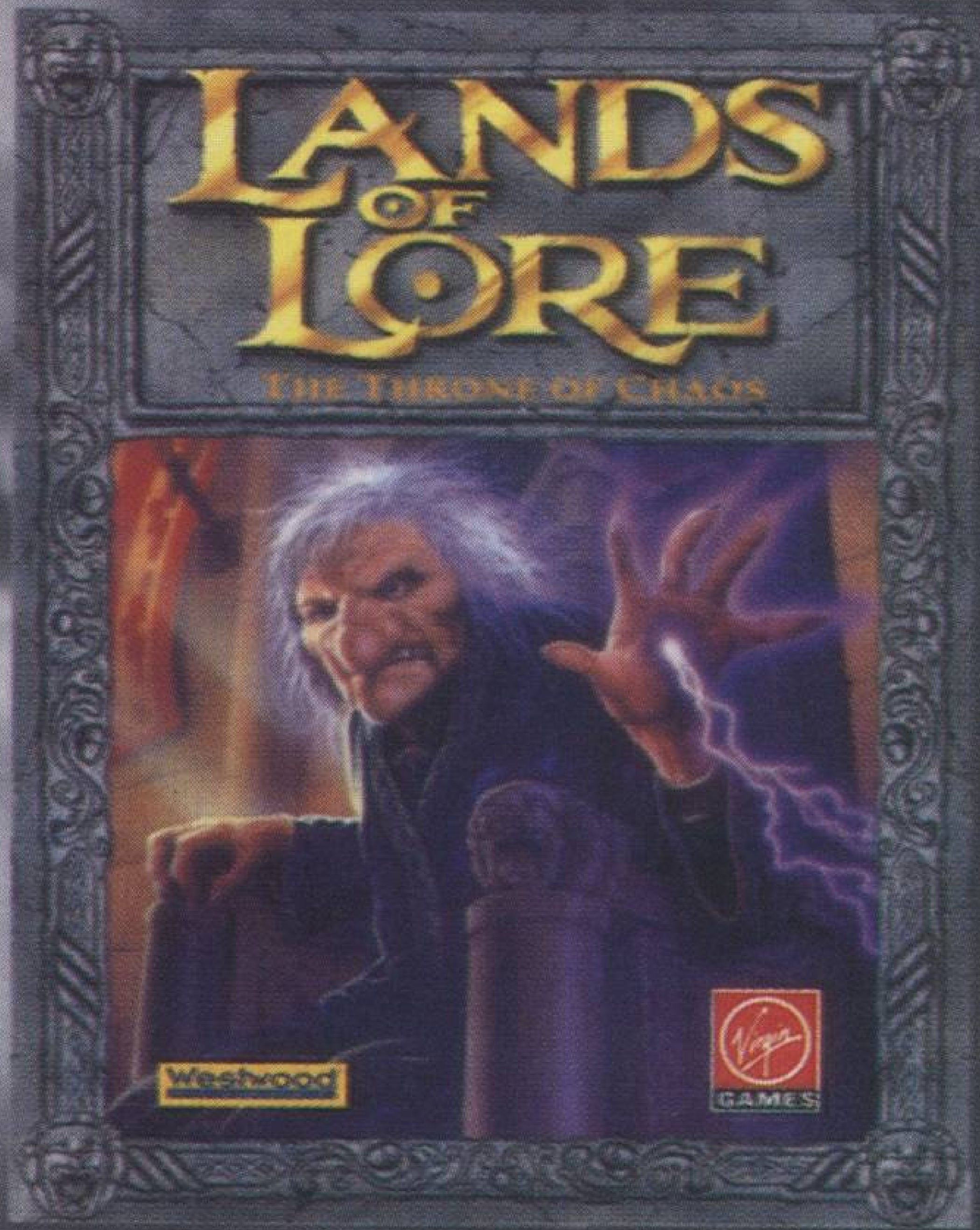


Now the legend is reality...



Lands of Lore: The Throne of Chaos from Westwood Studios, the talent behind Eye of the Beholder I &II.





Available for IBM PC and Compatibles





Westwood STUDIOS

Virgin GAMES

Format: **Super NES**
Publisher: **Capcom**
Price: **£90 (import)**

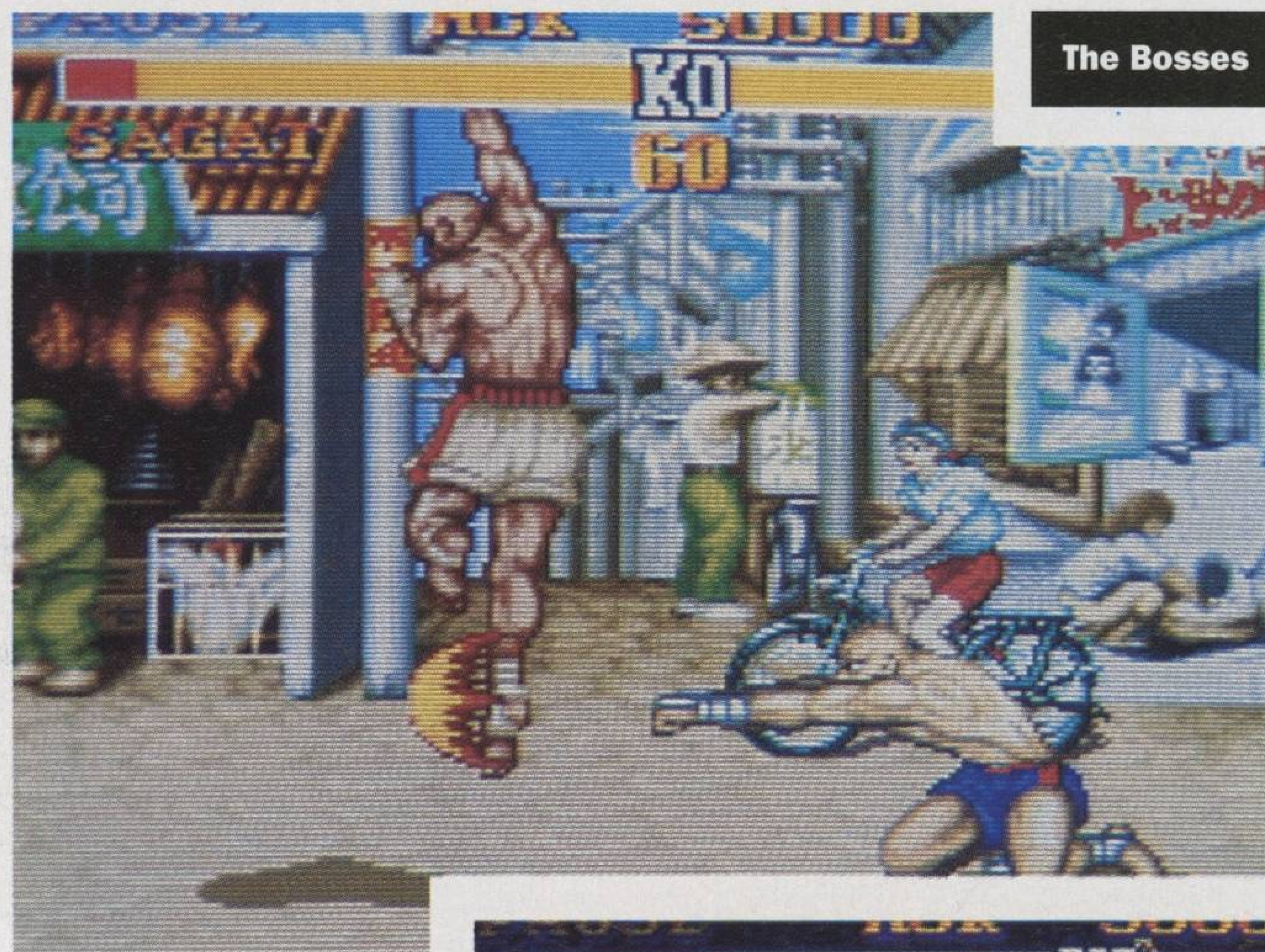
Street Fighter II

Street Fighter II Turbo hits the SNES with such force it almost breaks it. But the only smell of burning flesh is from greedy importers rubbing their hands at the prospect of charging ludicrous amounts of money for what must surely be one of *the* games of the year.

Street Fighter II Turbo gives you the option of choosing between the *Champion Edition*, or the improved *Turbo* version.

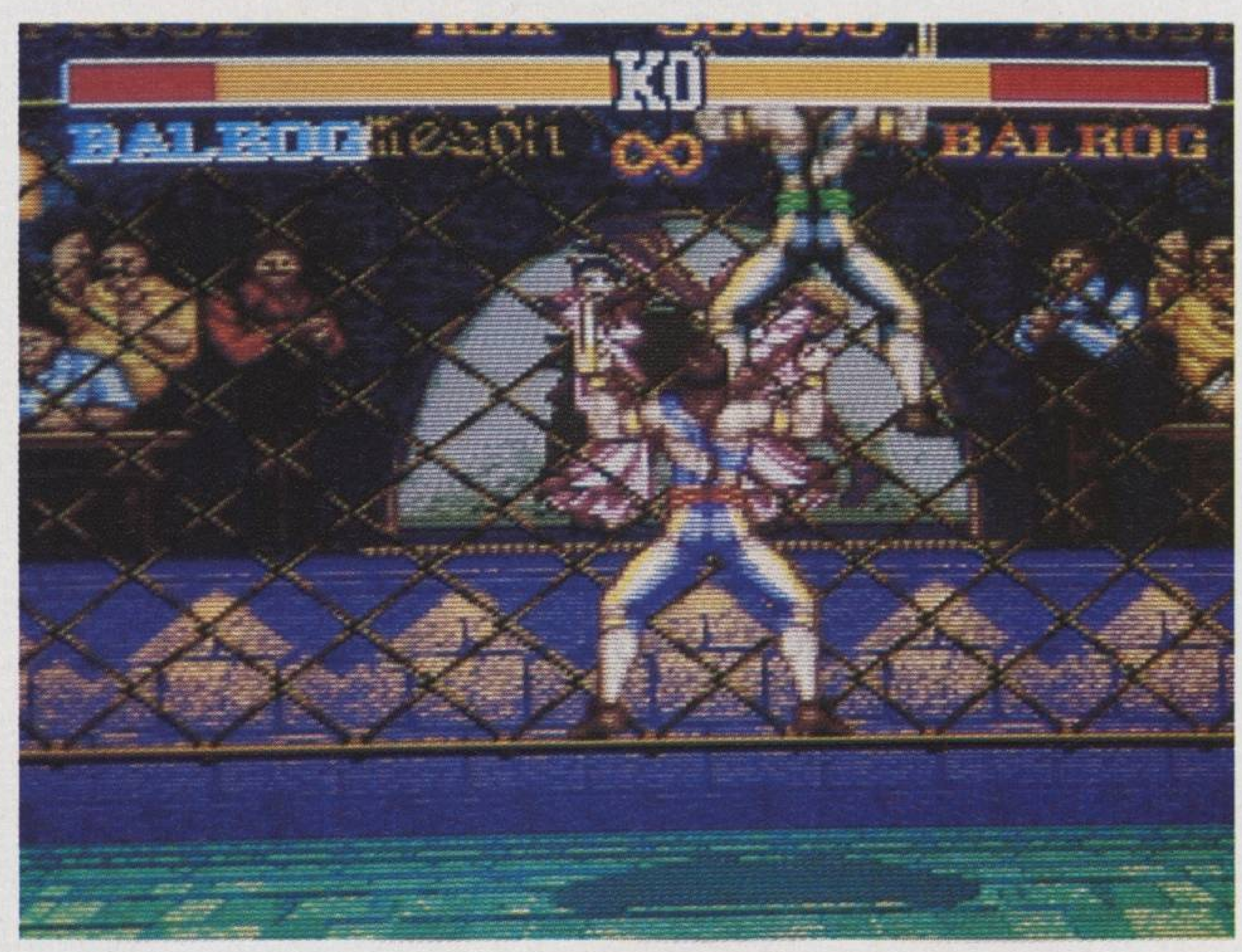
What's *Turbo* got that the other hasn't? Well, *Turbo* has four speed options (up to *very* fast), improved graphics, extra moves, plus the ability to control Vega and Co.

The game uses a massive 20 megs, as opposed to 16 in the original, and adds loads of speech. Playability is also improved, and all the characters are now more evenly matched.



The Bosses

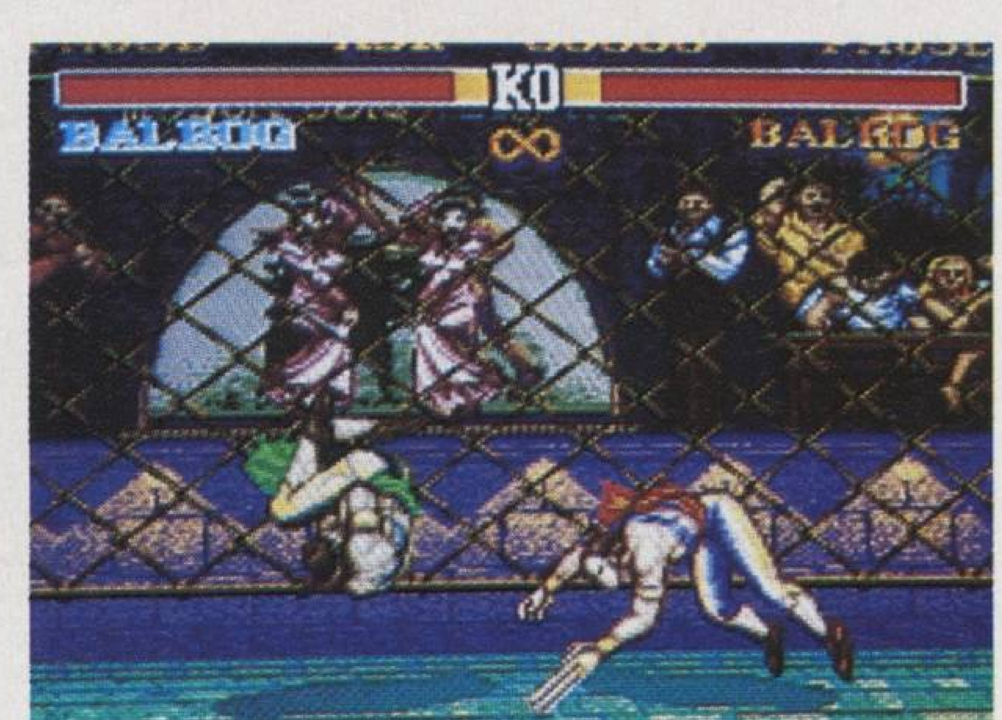
***Turbo* finally gives the player the ability to play as the bosses. Sagat Vs Sagat, both go through their moves as a passing cyclist looks on in dismay**



Balrog, fighting his mirror image, takes to the fence in preparation for his spectacular 'Inza Drop'



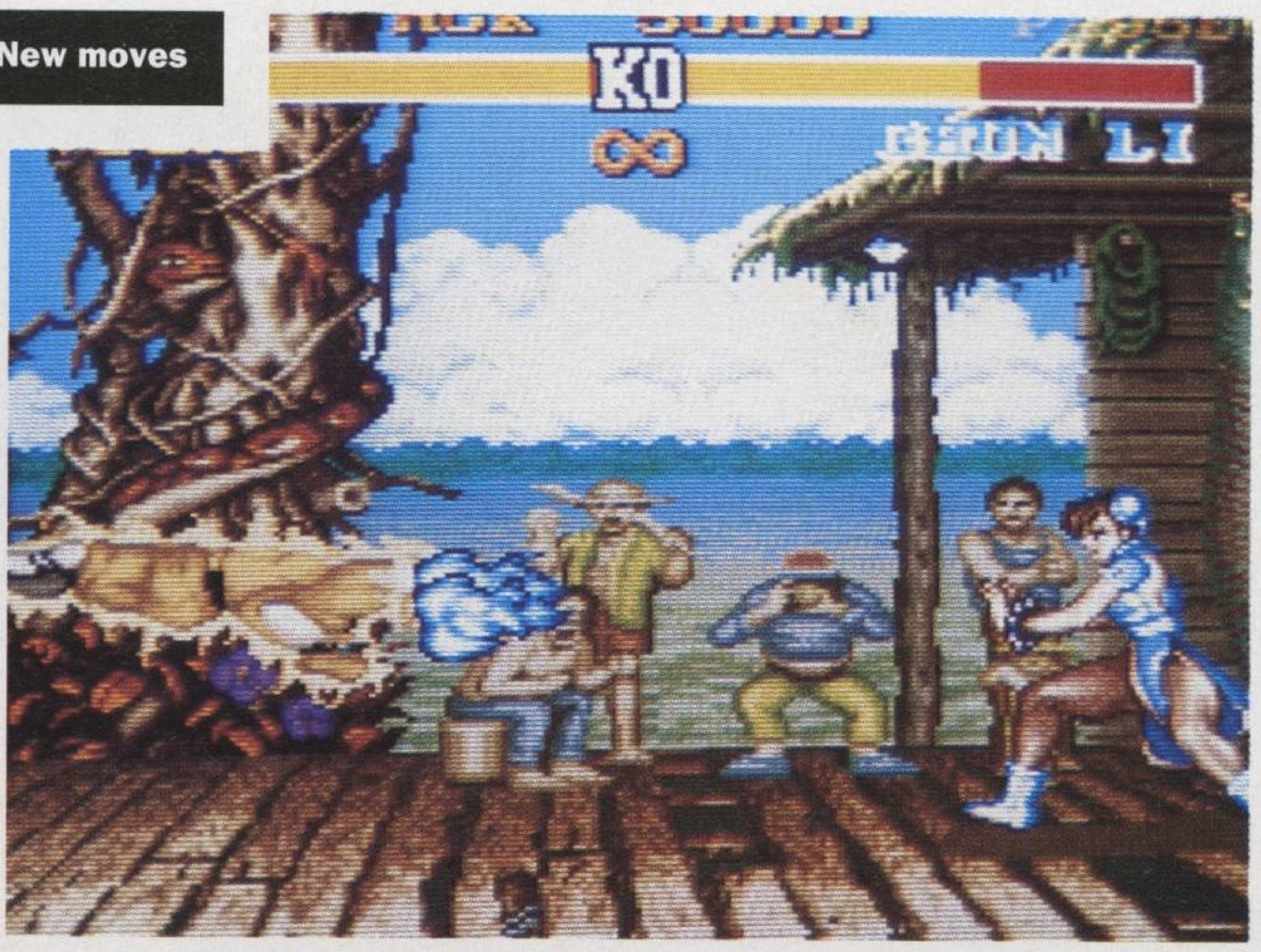
Bison and Vega fight it out in China. Vega is not quite as powerful as he was in the original version, but his flaming torpedo is still just about good enough to fry most opponents



'Anything you can do, I can do better.' Both Balrogs are at it again, this time both attempting the famous rolling claw move

Turbo

New moves

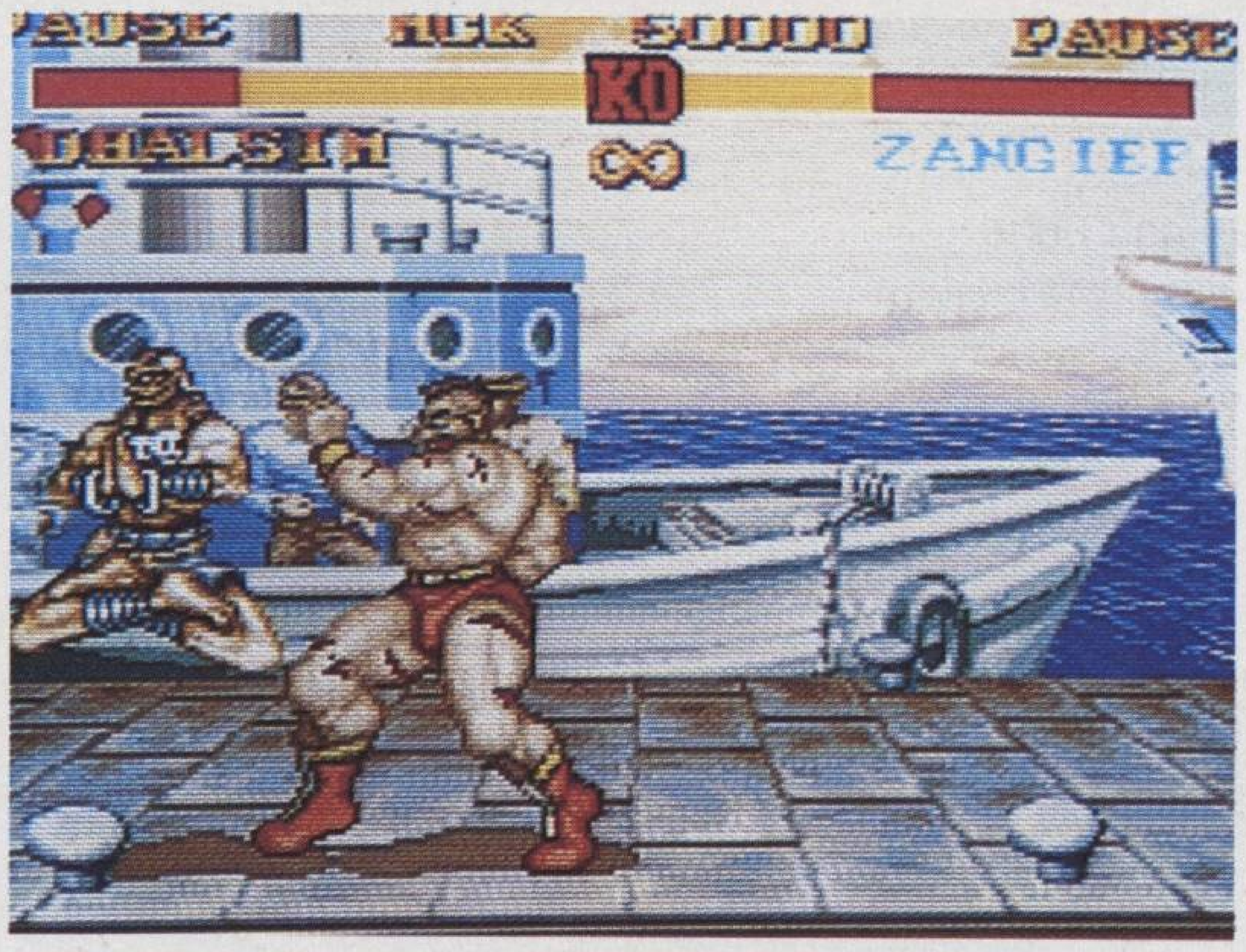




Ken and Ryu (above) can do 'Hurricane Kicks' at different heights and Chun-Li (top) now has a fireball (and about time, too)



Night-time has fallen in Japan, and Blanka demonstrates his vertical rolling attack, most useful against aerial assaults



Dhalsim can now perform his (ludicrously difficult) teleportation to baffle opponents

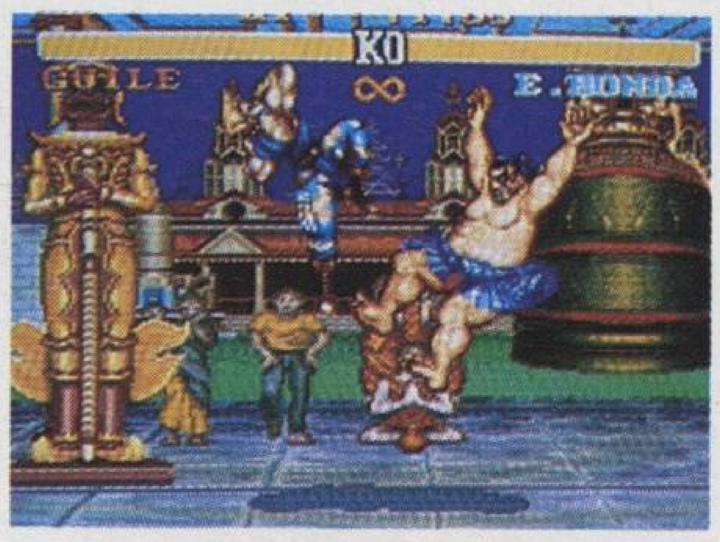


Guile, now not as powerful, demonstrates a new kneebutt attack





Zangief (left) is faster and can now move forward while doing his spinning lariat. Honda joins the upgrades – his hundred hand slap is deadlier and he shuffles along to prevent escape. Ken's dragon punch (right) travels further and higher, but it's not quite as potent as before



Guile and Honda's jumps now have more frames of animation







Street Fighter II – Championship Edition: the coin-op (left), SNES version (middle), and PC Engine (right). Turn over for more on the PC Engine *SFII*

Format: **PC Engine CD**
Publisher: **Capcom**
Price: **£85 (import)**

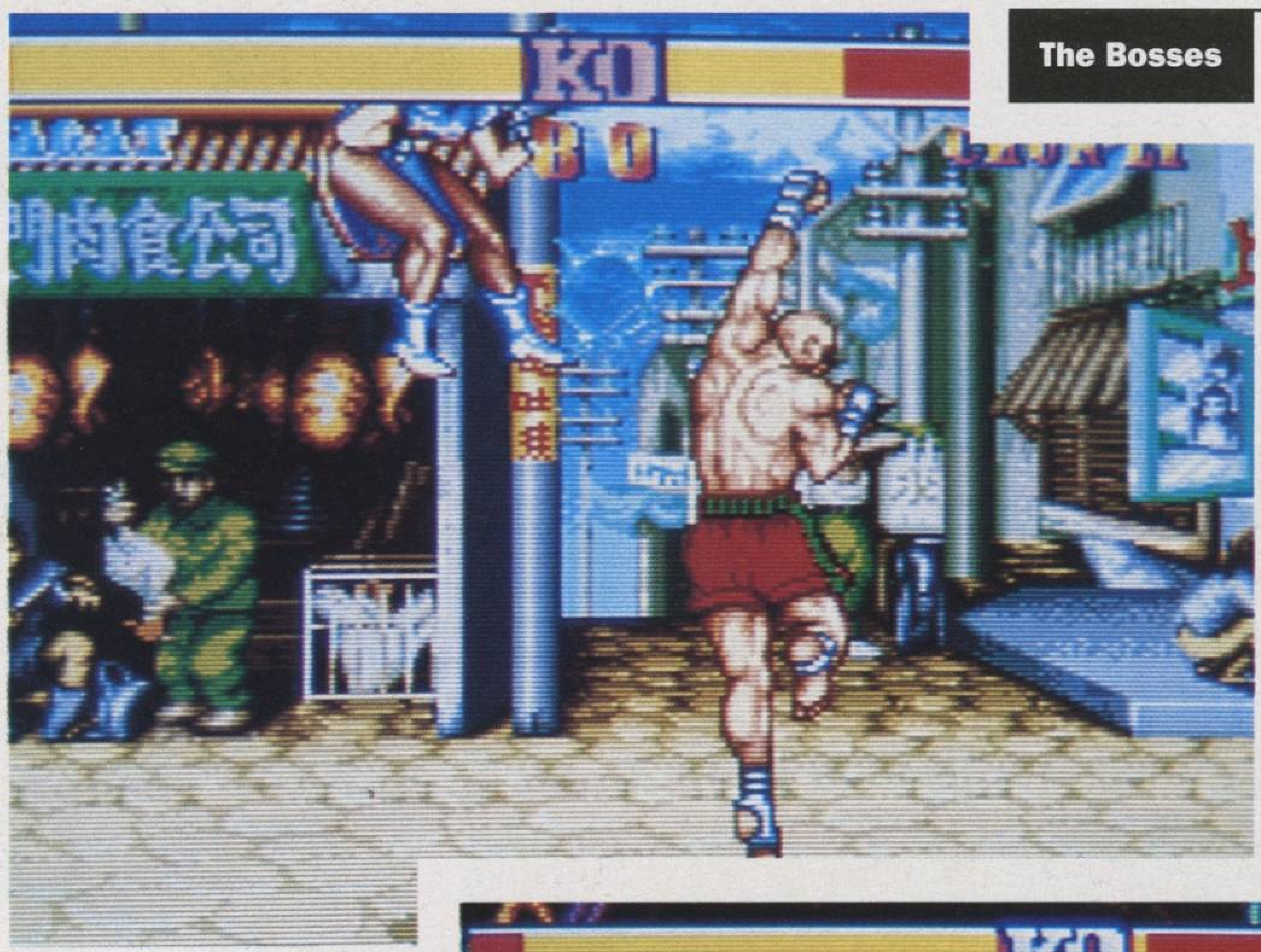
Street Fighter II

The world warriors are now available to PC Engine owners. And rather than opting for a CD version, Capcom – in conjunction with NEC – has put them on a 20 meg HuCard. It's hard to believe that a card so small and so thin, houses the entire *Championship Edition*. But it does – and it's fast too.

The *Championship Edition* allows the use of the bosses, and all their moves are present and correct – from Bison's flaming torpedo to Vega's roll attack. The moves are easy to pull off – you'll soon find yourself producing some spectacular combinations. The graphics are wonderful, but sound is a bit of a disappointment – it's accurate but scratchy.

Currently selling for £85 on Japanese import, this title shows what the Engine is still capable of.

The Bosses



Remarkable as it may seem, this is the PC Engine version. Sagat takes on Chun Li in her backyard, and his tiger uppercut looks to have connected



Bison looks set, unless something drastic happens, to wallop his alter ego with his powerful turning punch



Vega's flaming torpedo has been just avoided by Sagat. Or has it?



Now you can get your own back on all those terrible swan dives Balrog has inflicted on you (only it's better if you hit someone)



Street Fighter II – Championship Edition: the coin-op (left), PC Engine (middle), and SNES. **For more on the SNES version, turn back a page**

Champion edition

The moves



Ryu sends Blanka flying with his throw while Balrog stabs Guile with his claw





Ken shows off his throw which is more energy draining than Ryu's. Muscle-bound Bison can do nothing but go with the flow



Dhalsim's front room is full of elephants and... hold on, what's that on the floor?



The barrel smashing bonus stage makes it onto the PC Engine version



If you play with fire, you're sure to get burnt. If only Guile had heeded this warning. Vega shows no mercy and proceeds to torch him with his flaming torpedo. The sound effects are very good, and a suitable 'whoosh' accompanies this spectacular move



Another bonus stage, this time Vega makes light work of this luxury saloon

testscreen

Format: **Mega CD**
Publisher: **Game Arts**
Price: **£60 (Import)**

Silpheed

The year is 3076. An anti-government rebel force has taken control of the Grayzon computer on Earth. Meanwhile, the surviving members of Galaxy Union Force gather to launch a counterattack. Their trump card is the heavily-armed interplanetary fighter, the SA-77 Silpheed.

Silpheed first came out eight years ago on the NEC PC-88SR in Japan. And the designers of this remake have taken the same basic gameplay and merged it with a steady stream of what are the best visuals yet seen on the Mega CD.

Level two



'Look at the size of that thing!' Avoid the asteroids at all costs. This is polygon heaven, and the action gets better as the levels go on



The SA-77 can fly deep into the screen to outmanoeuvre the stage two asteroid belt

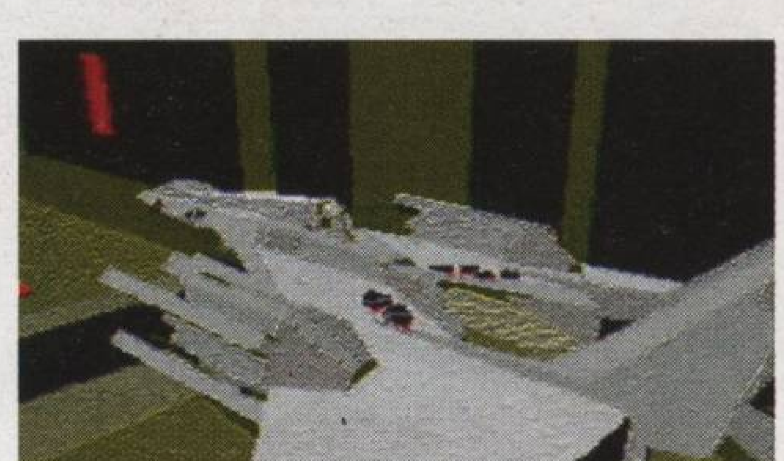


Alien ships approaching. These guys fly in close formation and are tricky to avoid or kill. Some aliens also attack from behind

The ingame intro is fabulous. Thanks to the combined efforts of over thirty people, and 3D graphic techniques that have been in development for years, Game Arts has redefined the state-of-the-art on the Mega CD. Months were spent building 3D models of giant spacecraft – a set of geometric shapes like boxes, cylinders and spheres were also constructed. Some of the ships in *Silpheed* are made from a total of 25,940 polygons. Here the camera pans around the SA-77, and follows it to the launch bay. A digitised voice outlines your mission – basically blast or be blasted

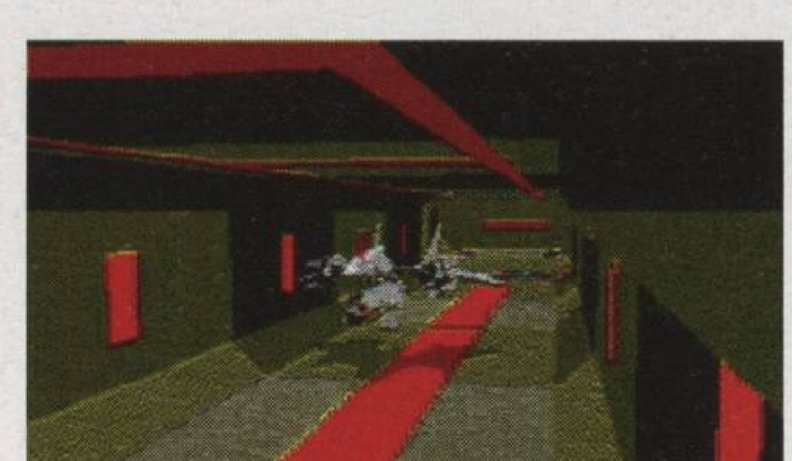
Intro





Your SA-77 is being lowered into positon ready for its launch





The camera pans around your SA-77 as it fires up its engines





The intro lasts under a minute, but is the best yet on Mega CD

Level one

Weapon select. Nothing to write home about yet, but just wait...



Level two



The asteroid level is tough, watch for the small astroids

Level three

Your first encounter with one of many motherships. And you're under attack



Level four



Sweeping camera angles as you fly past alien defences

Level five

in hyperspace and still there's no letup in the speed of the alien attack



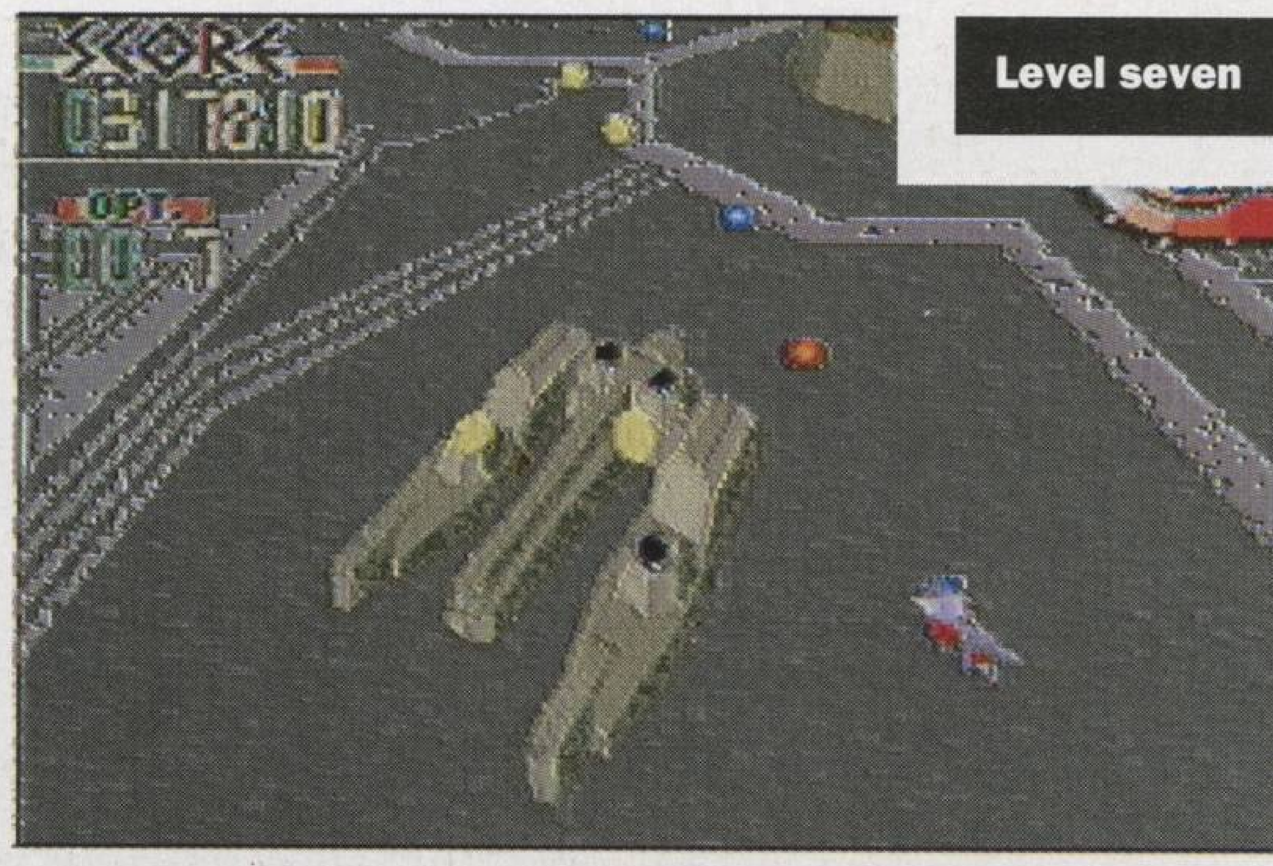
Level six



Level six sees the SA-77 flying through arctic conditions



Level six



Level seven

Just over half way through, the action suddenly intensifies as loads of bosses appear to put an end to your heroics. Use your power-ups correctly and you should have little trouble despatching this sucker. The wide-beam laser fire is most useful against these guys

Your journey through this level starts on a cold deserted planet. Suddenly the view changes and you're faced with giant motherships – lots and lots of huge motherships. Collect an invincibilty icon as soon as possible, as the alien craft waste no time in eliminating you. And there's only four units of shield remaining...









The most varied level in the entire game. Here the SA-77 is caught in the middle of a vertically moving lift. Avoid the beam



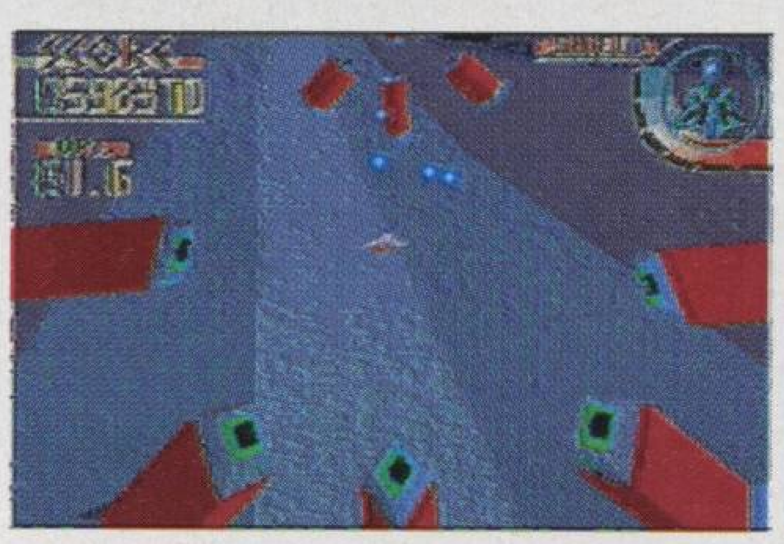
Another section from level seven, flying over a big metallic construction you have to avoid the huge girders as they fly past at an astonishing rate. The first real use of interactive backgrounds



Level eleven

The penultimate level, and the action gets faster and the aliens get loads meaner. There are trench sequences throughout the game, but level eleven's trench bit will leave you with beads of sweat pouring down your face. Fry those suckers







The end of level boss is not that huge structure in the back of the screen (top left), but it is in fact that rather weedy looking thing hovering just in fromt of it. The SA-77 is fully loaded now, and those balls of fire are your only defence against the death-dealing boss. This section (bottom left) requires careful observation as you have to guide the SA-77 through this tunnel while shooting the enemy. Damn those lifts! (above)

Level seven

The best level in the game, where you fly through a vast alien cargo container ship





The entire enemy fleet lies between you and the Earth

Level eight

Level nine

The journey's almost over: you just shoot past this planet and take the first left





Finally above Earth, but the rebels haven't given up yet

Level ten

Level eleven

The penultimate mothership is about to blow. And you've got one level left





No stage twelve, just a boss – a big, dirty, mean boss...

Level twelve

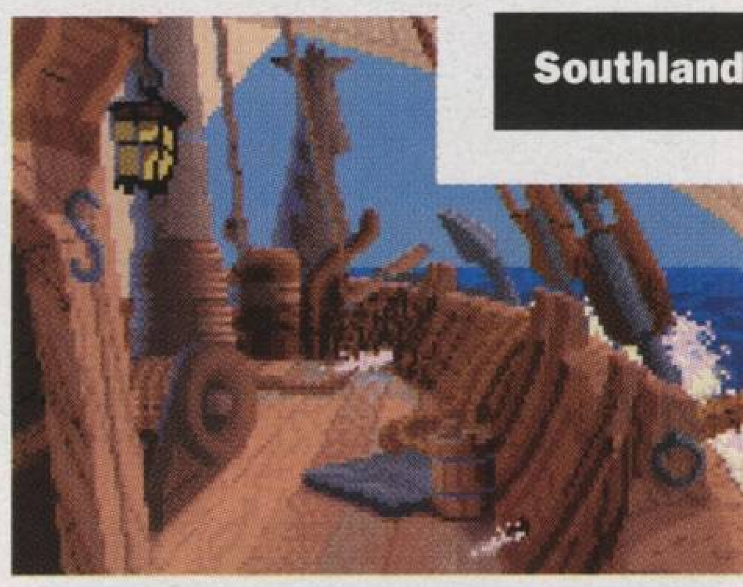
Format: **PC**
Publisher: **Virgin**
Price: **£35**

Lands Of **Lore**

Lands Of Lore uses the same RPG engine that's been around for years: the first person perspective, square-based movement approach. Come to think of it, it also has pretty much the same plot as many other RPGs: a land threatened by a witch can only be saved by your good self, by returning a sacred something or other that the witch has nicked. Heavens.

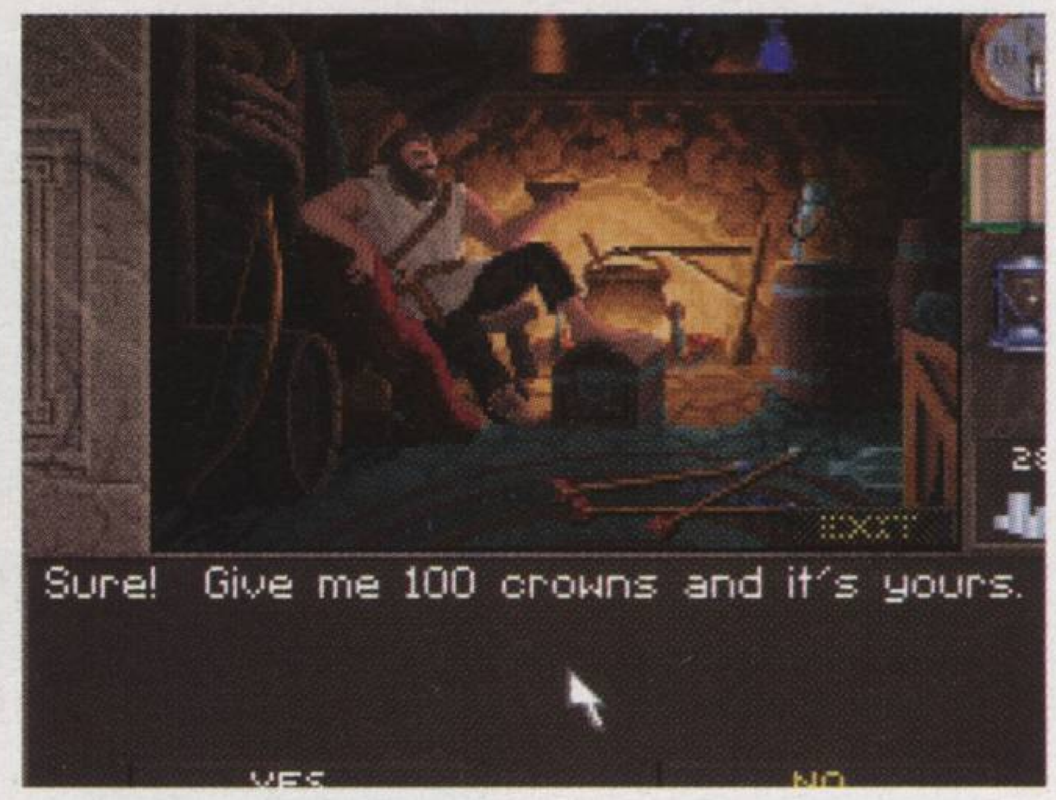
What's different is the way the game works. Firstly, you don't bother about creating a character, you simply choose one of the four available. As the game progresses, other characters join (and leave) your party, depending on the plot twists. The story's broken up into separate parts, sort of sub-quests, and between each there are entertaining filmic animations to bring you up to date with the story and set you the next quest.

Southlands



Your first job is to get the Ruby of Truth from the forest to the south, so after a bit of boat-based fun (left) you arrive at a pub. Up pops this bloke, Timothy (below left), and tags along for a bit... well, to the weapons shop, anyway (below)

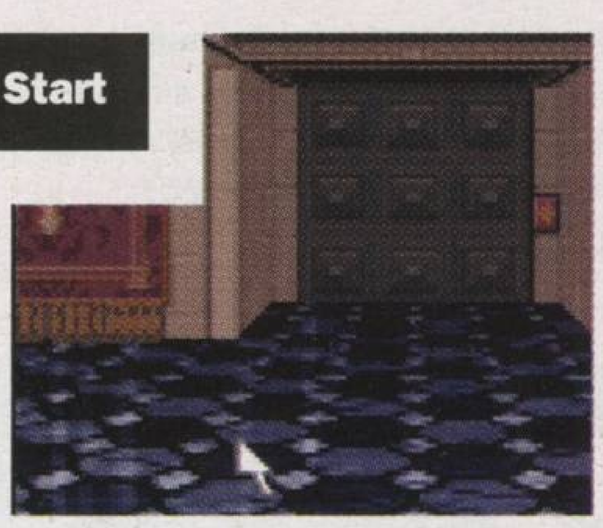






The controls and look of the game bear a strange resemblance to the *Eye Of The Beholder* epics. There are the movement arrows, character displays of magic and health, a voluminous inventory, the spell scroll, and some funny numbers which shouldn't be there

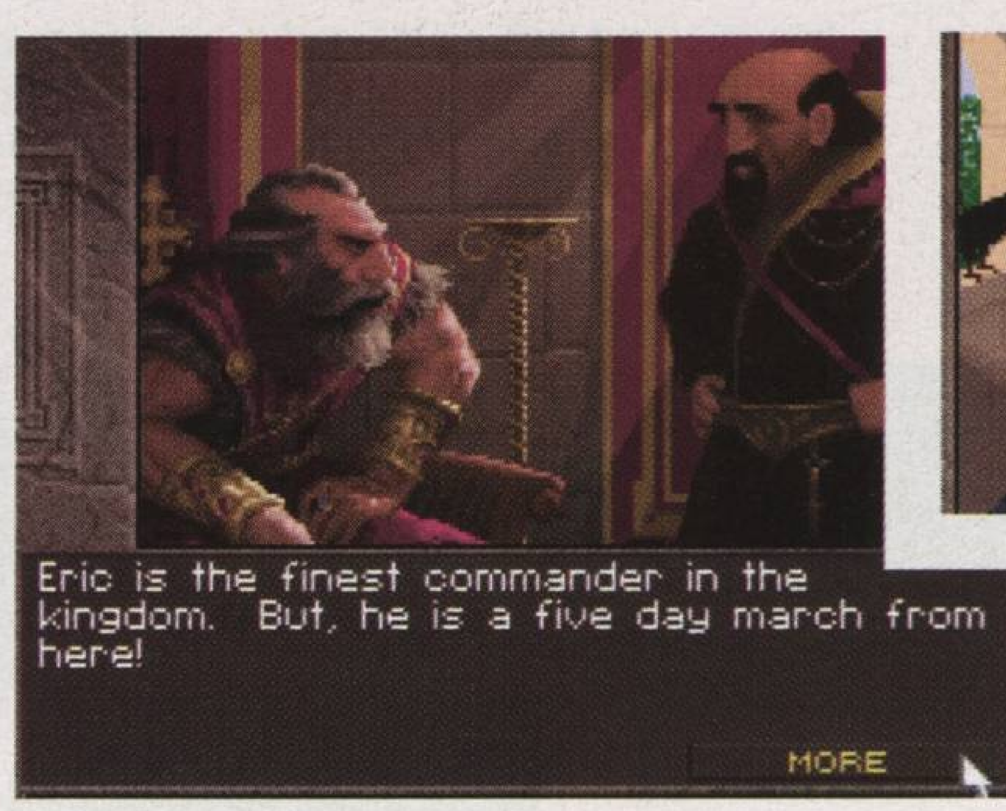
Start



So then, all ready to go. And what an attractive floor pattern. Just through that door...



... lies the medieval equivalent of The Body Shop. Actually you should stock up with healing herbs here for later, before wandering out to...

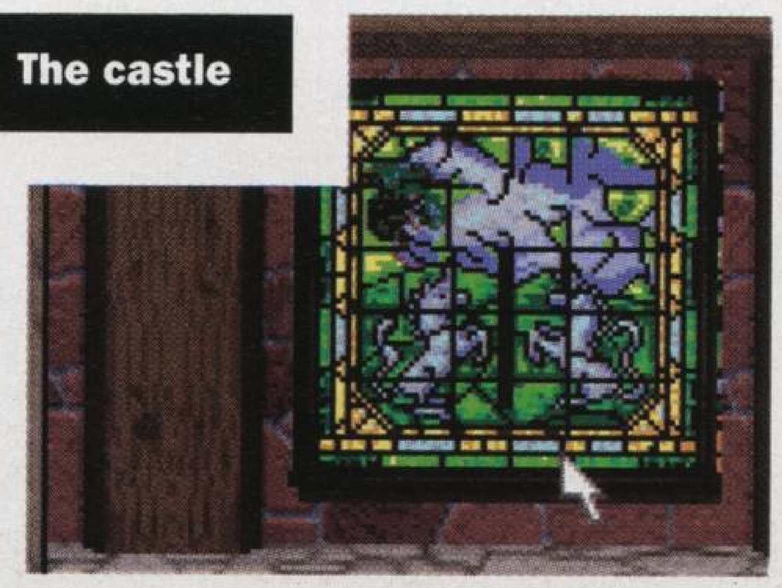


... the King's room (or chamber, if you must). At the moment he's nattering to the Royal Chamberlain, whom, after seeing Kingy...



... you should visit. That crow's more sinister than it looks

The castle



The view into the castle grounds – a flash of colour on the grey stone walls

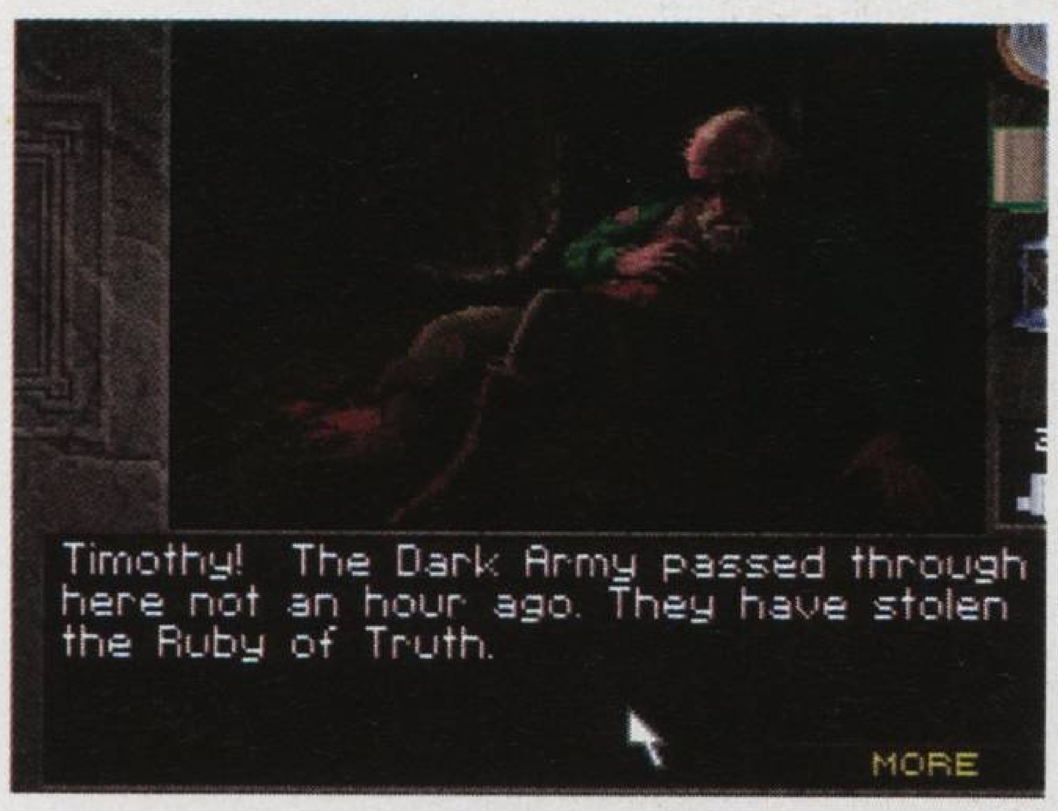


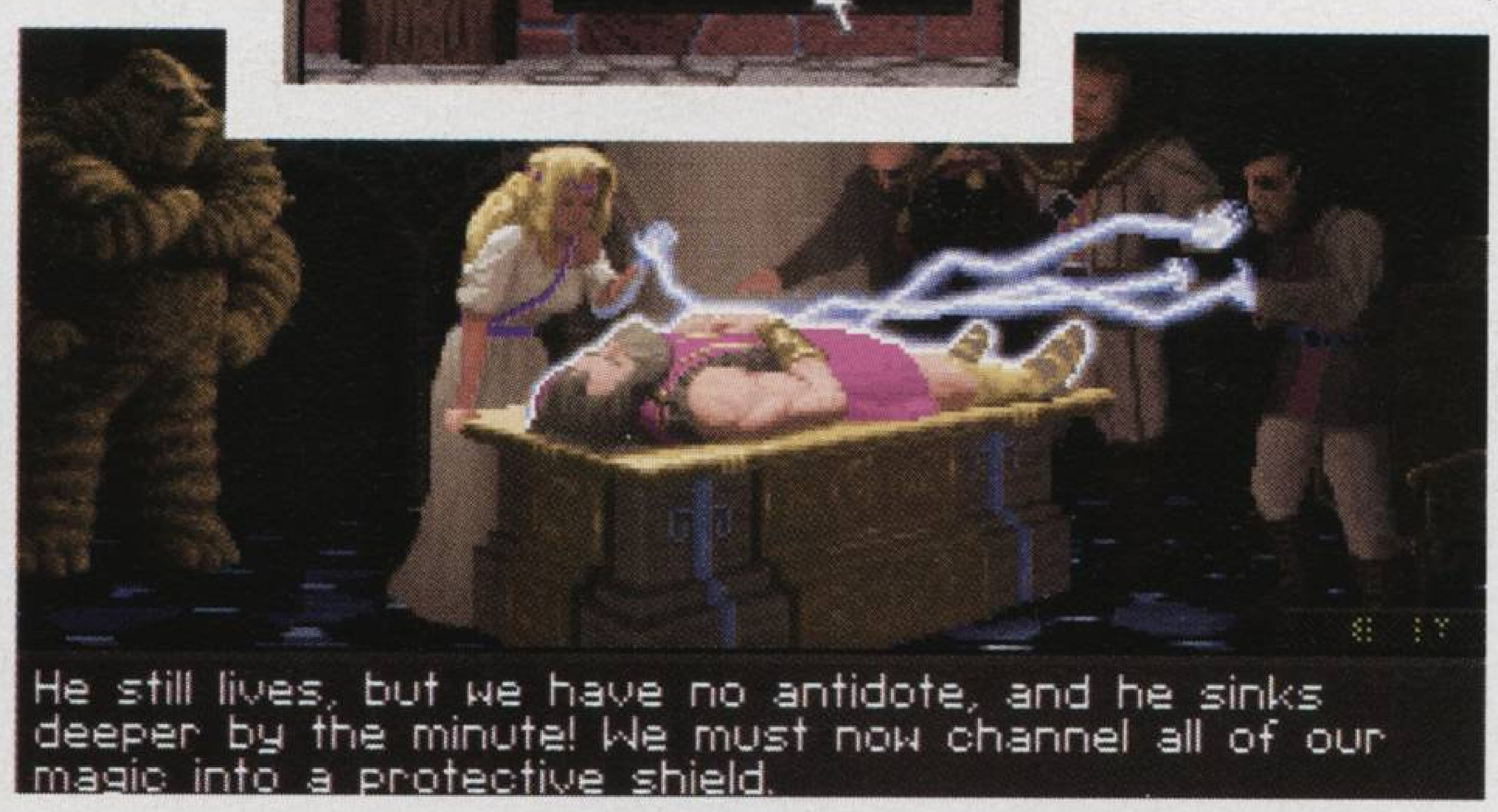




Some of the monsters you'll meet on your quest

You find the house of Roland (keeper of the Ruby), but it's been nicked, and he's been done in (below). Get back to the castle quick... Ah, it seems the King's not feeling too clever either (below right). Still, they can do wonders with magic



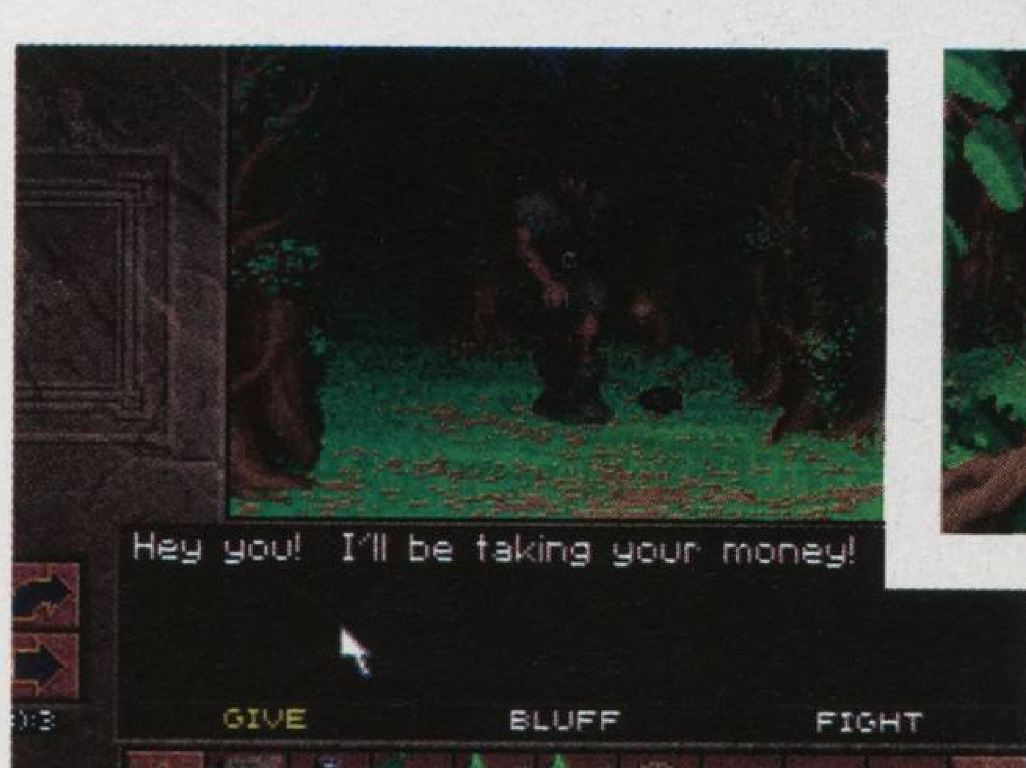




Even the character screens are fairly simple. The better armour you have, the more Protection; better weapons, more Might. Those skill levels go up slowly



'Yes, quite nice, but have you got them in a size ten? Sorry? Could you just put that sword away, please? No? Ah...'



Ah. A friendly local of the forest. Bluff your way past him if you can, because there's no need for a lot of messy violence...



... then find this cave – it's important. Bluff or fight your way past the guards, go in...



... and make sure you look around thoroughly. This is the first place that hidden levers and pressure pads come into play



Blimey. How can you turn away someone like this? But she's not all she seems...

Format: **Super NES**
Publisher: **Nintendo**
Price: **£90 (Import)**

Super Mario

Nintendo surprised everyone by announcing, with the minimum of fuss, the Super Mario All-Stars Compilation for the Super NES. So far all the hype has come from magazines and gamers eager to get their hands this collection of old NES games, updated for the Super NES. Right now, it's only available on import (at prices upwards of £90!) and it doesn't work with some adaptors. But it will be available officially in the UK from October at £50 and there will be a new Super Mario All-Stars Super NES bundle costing £130 following soon after.

Lost Levels







This was Super Mario Bros 2 in Japan. It was available on disk only for the Famicom, the Japanese NES. It's not that much of a sequel, more an extension of the original – it's the exact same game engine as Super Mario Bros with new levels. The graphics are pretty the same as the original but it's much harder



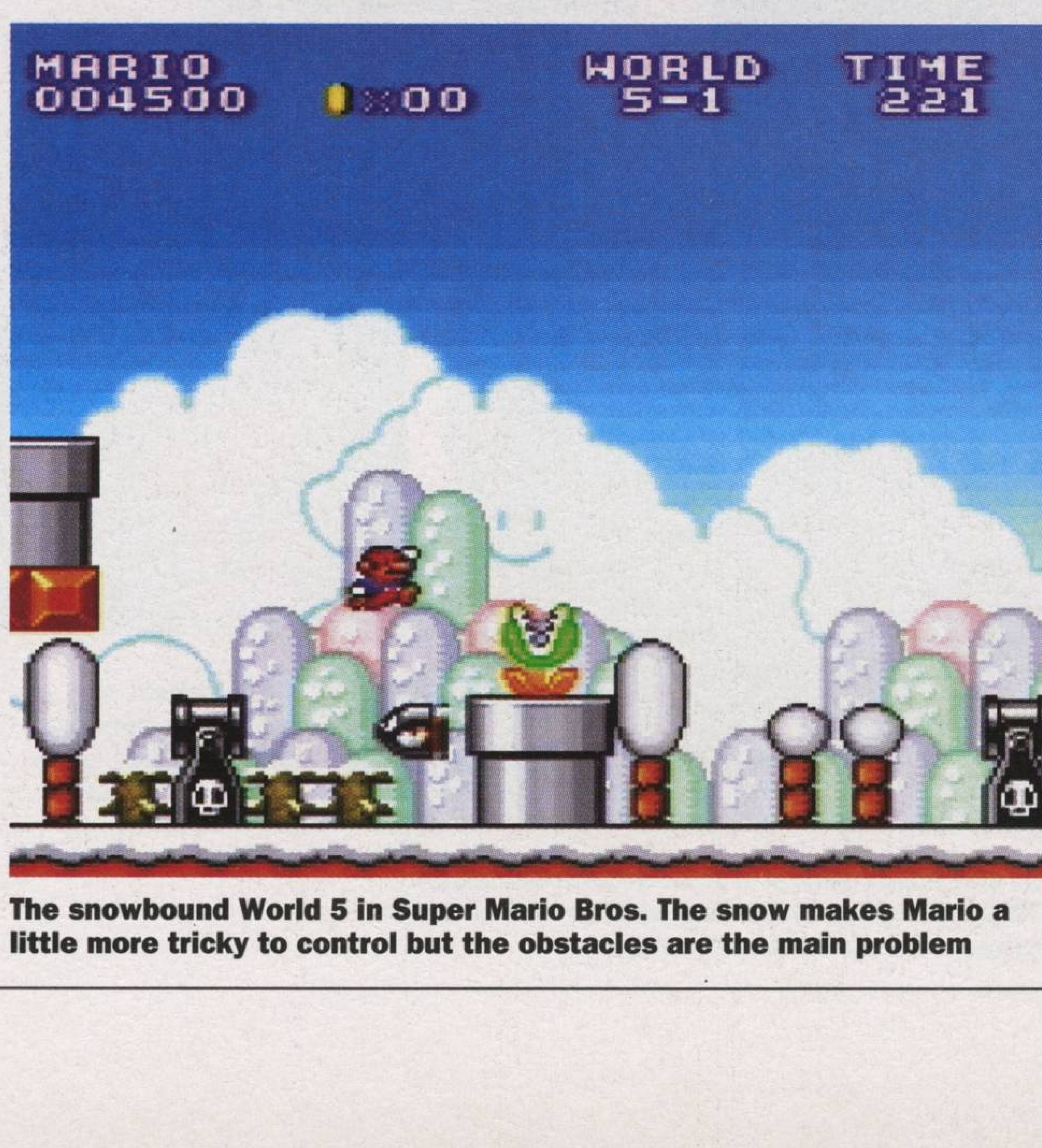
By jumping up and hitting blocks in platforms Mario can get coins and power-ups like the mushroom and the fireball flower



Mario 1



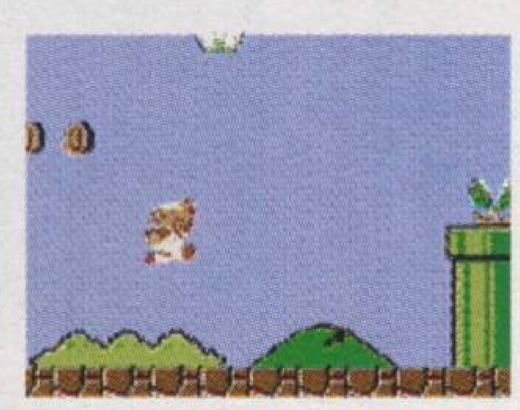
Mario can get onto the 'ceiling' of some levels to reach warp zones



The snowbound World 5 in Super Mario Bros. The snow makes Mario a little more tricky to control but the obstacles are the main problem



Originally an arcade game, the NES was launched with an arcade-perfect version of Super Mario Bros – not so difficult as the NES used the same boards as the arcade. The game took elements from the single screen Mario Bros platform game, like the block bashing and the power ups, and put them into an enormous scrolling game. There are eight different worlds, hidden warp zones to skip entire levels and the first showdown with King Koopa Bowser waiting at the end



This is is the original NES Super Mario Bros – the Super NES version keeps every gameplay detail

Collection

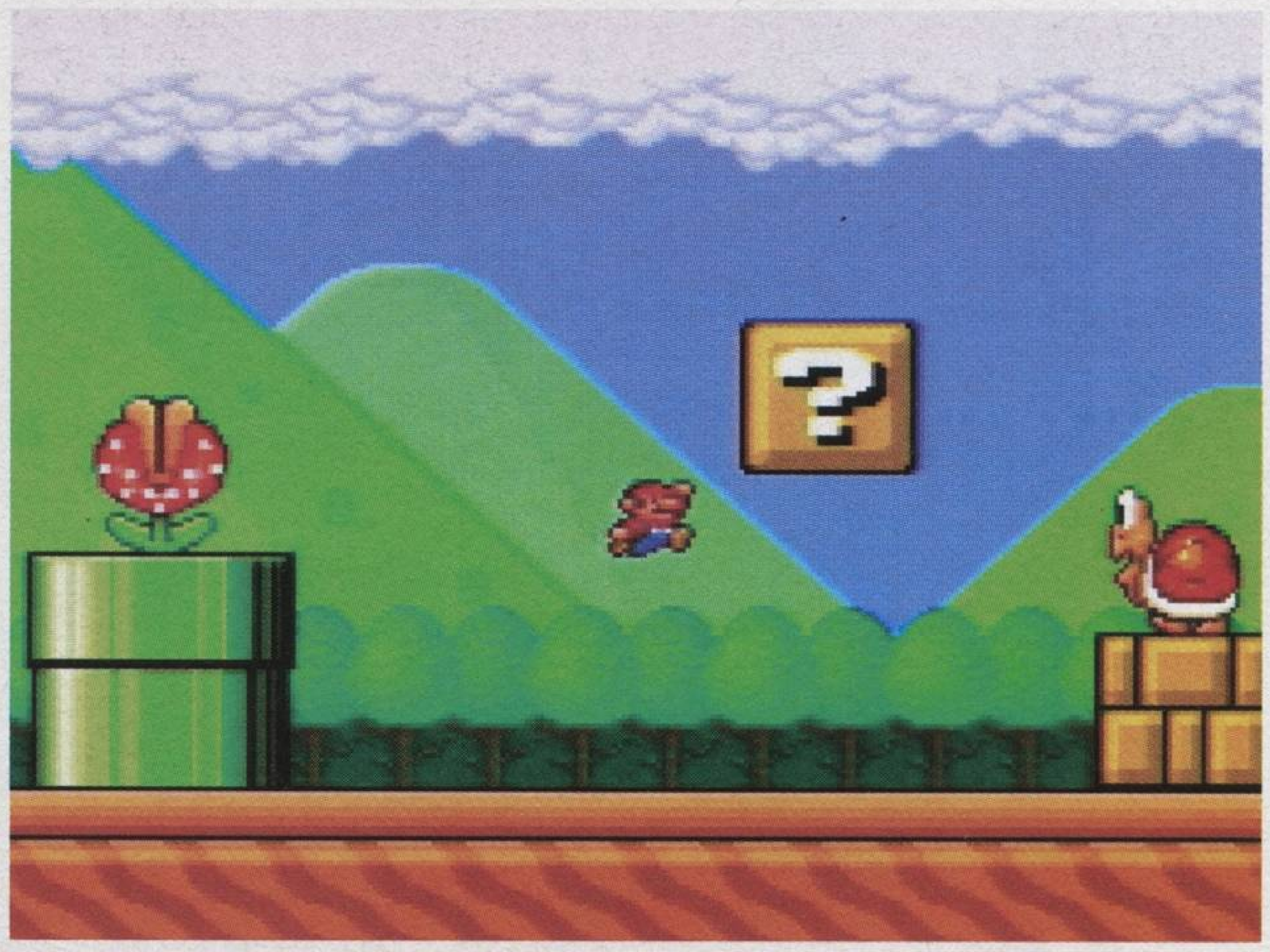
World 8 on Super Mario Bros 3 is very tough. On the first level Mario has to get avoid the tanks and their gunfire as they grind towards him

Mario 3





Each of the eight worlds in the game has its own map. You can choose your own route through it



Super Mario Bros 3 was launched in 1990 and went on to become the best-selling NES cartridge of all time. SMB 3 expanded on the first Super Mario game in a number of ways: each world was presented on a map so that you could choose which levels you wanted to play; there were plenty more hidden warps and some very convoluted bonuses; a card game and a version of the ancient Mario Bros game hidden somewhere in it. Super Mario Bros 3 was huge, graphically varied and set new standards for console games when it first came out. This version has a save game facility, making it much more approachable



Super Mario Bros 3 can be played in two-player mode – if the two meet up on the same place on the map they get to play the original Mario game. The winner takes a life from the other player







More power for Mario in SMB 3. He can pick up Koopa shells and throw them, and there are two suits – the frog suit and the flying Tanooki suit

Mario USA

No jumping on the heads in Mario 2 – try that and you'll die straight away. He has to pick up objects – pots and, it would appear, giant turnips – to throw at whatever attacks him.











Known as Mario 2 in the US and Europe, this was originally called *Doki Doki Panic* in Japan, and it's an arcade game set in mythical Arabia. The programmers changed the character sprites... and not much else. Gameplay's completely different to the other games – Mario has to uproot turnips and throw them at his enemies

testscreen

Format: **PC Engine CD**
Publisher: **Konami**
Price: **£60 (import)**

Gradius II

Although *Gradius II* appeared before Christmas last year in Japan, its popularity made it a difficult game to get on import. Its release came and went without much notice. So, here's the first proper look at the Engine version of what's known over here as *Vulcan Venture*.

Gradius II follows the HuCard version of the first *Gradius* game, but with vastly superior graphics and sound. It's one of the old school of shoot 'em ups: long levels, mid-level obstacles, and one of the first, but still one of the best, power-up systems ever designed.

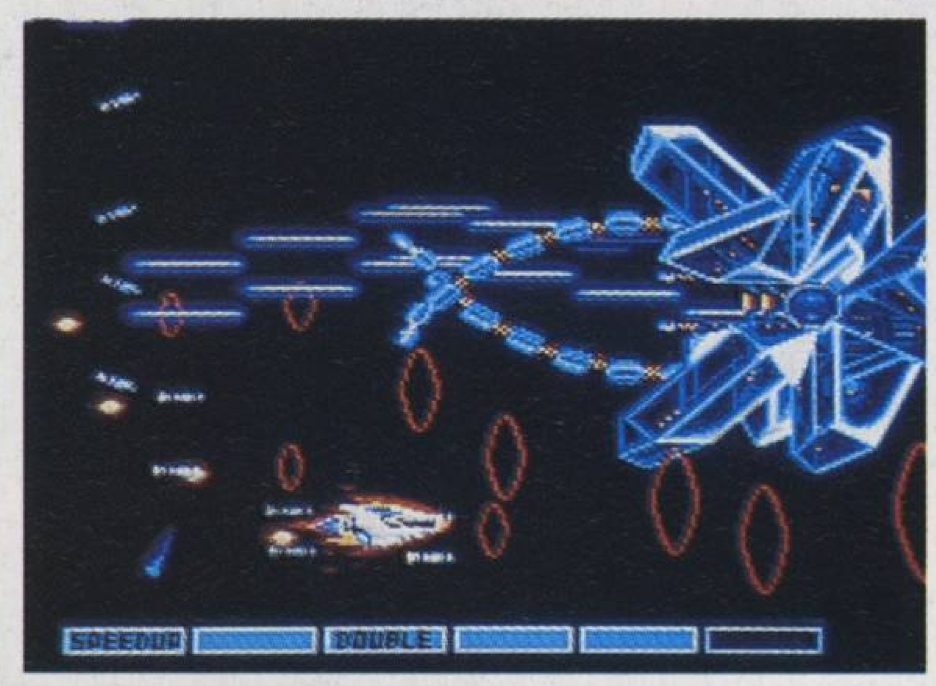
Level one



level one is almost identical to the arcade, with the scrolling suns and flaming serpents well reproduced. It's possible get a multiple and a laser here for use against the boss



The Phoenix isn't too tough, as long as you keep your distance from its wings. The bird spits out blue flames at you, so get ready to dodge



Perhaps the most impressive level from the coin-op, the colliding iceberg section, is perfectly translated here. And it doesn't seem to slow down like it did in the arcade

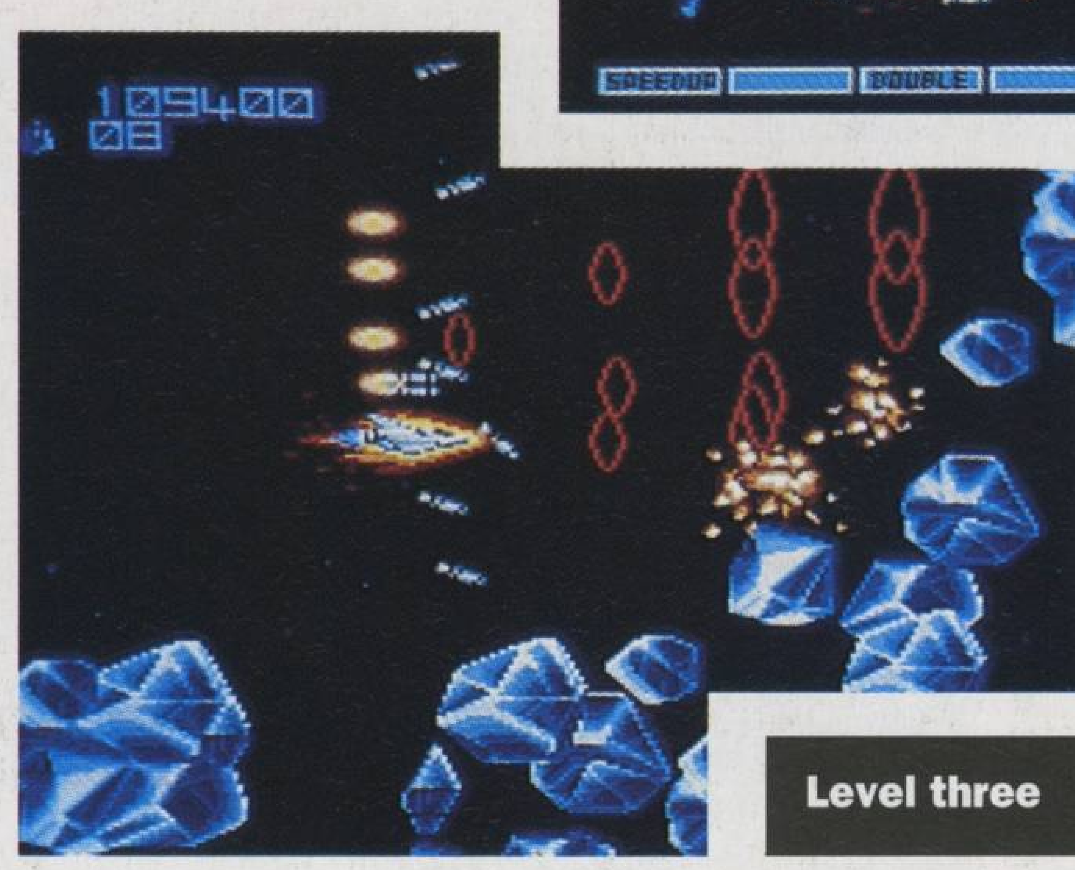
Level two





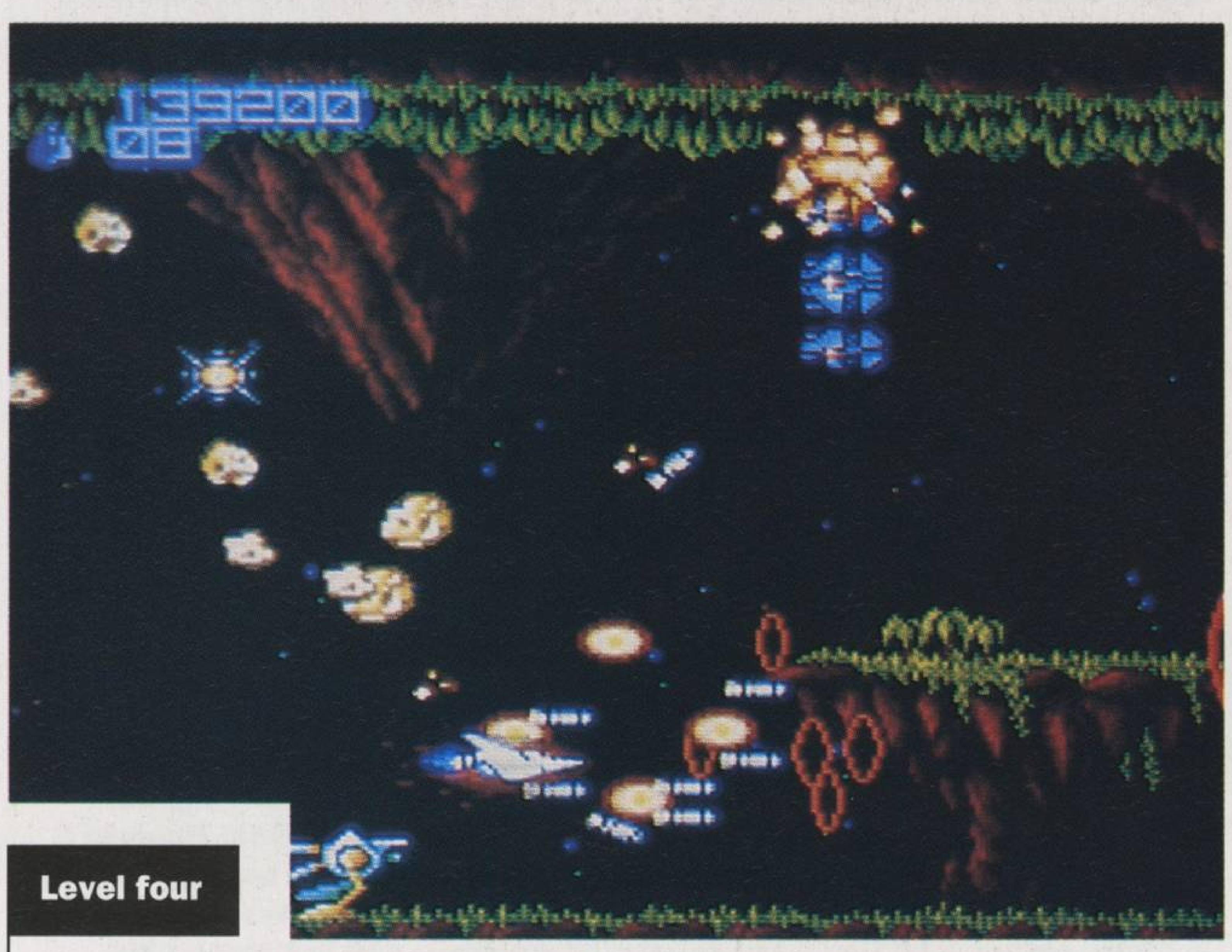
The metallic graphics of the second level include a web-like substance that you have to shoot a path through. Inset: The boss with arms is quite familiar

Level three



Hands up who recognises this nice looking chap from *Gradius III* on the Super NES? He was one of the bosses on the multiple-boss stage that you found much later on in the game

Level four



Familiar territory indeed. Almost identical to level one of the first *Gradius* game, this is the first really tough stage to get stranded in without any weapons. Hardly the state of the art in bosses, but it's still tricky to deal with without a speed-up and weapons, as seen here

Level five



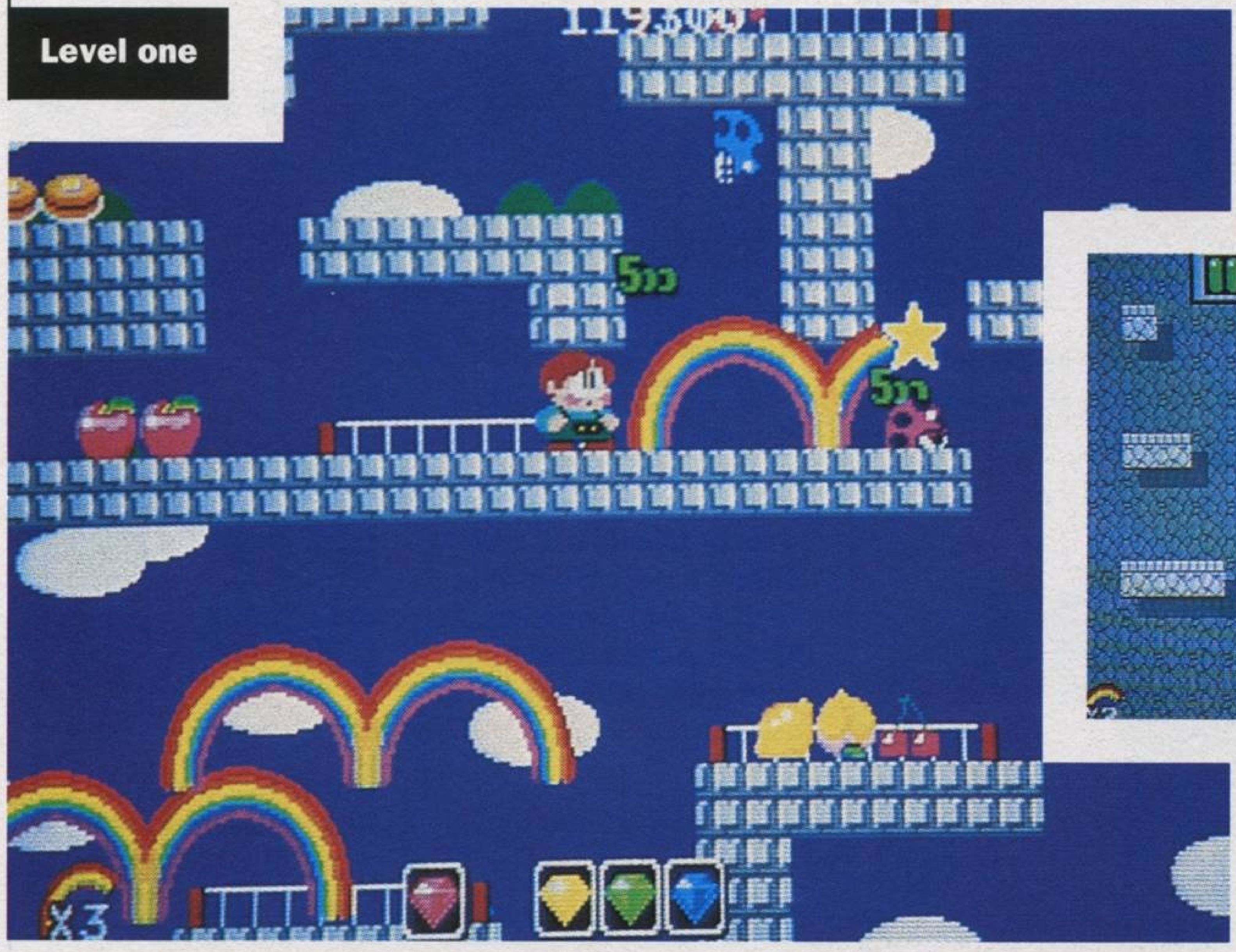
Level five is full of Easter Island heads, similar to level four on SNES *Gradius III*. The boss is genuinely hard to deal with, too. Dodge the rotating heads that chase you, and shoot the mouths

Rainbow Islands

Format: **PC Engine CD**
Publisher: **NEC Avenue**
Price: **£60 (import)**

Well, if the graphics weren't identical to the coin-op it'd be a bit sad wouldn't it? Bubby traps a ladybird with a rainbow (below). Also available for the PC Engine is the follow-up, *Parasol Stars* (right)

Level one







The spider boss (above) is a doddle. Just keep moving and ploughing rainbows into him as he lands

The arrival of *Rainbow Islands* on CD-ROM comes after about three or four years of dithering. This sequel to *Bubble Bobble* is still one of the best platform games ever. It's simple-looking, but underneath lies very intricate and testing gameplay.

Basically, the object is to get to the top of each vertically-scrolling level using rainbows. By shooting them all over the place, they work as bridges allowing you to cross over gaps between the platforms, and they kill baddies in different ways too, yielding assorted bonuses.

Also available for the PC Engine, but on HuCard, is the follow-up game, called, *Parasol Stars*.

Level two



Unlike the letterbox-sized Amiga version, level two is fairer, and nowhere near as difficult. Note the nice touches like the enemy truck driving over your rainbow

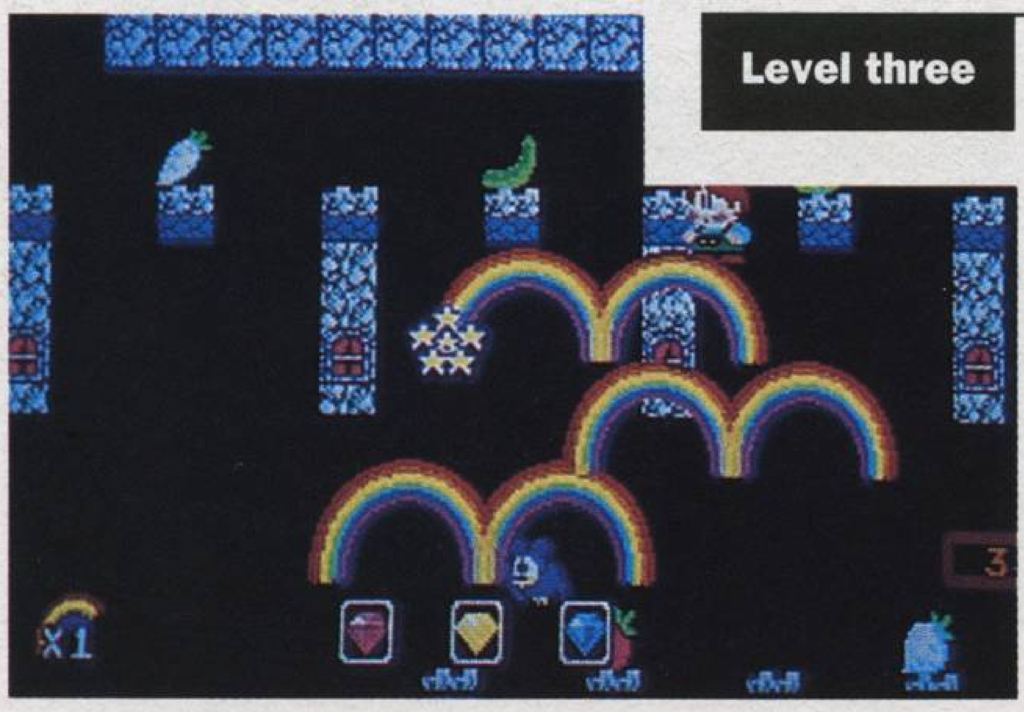


***Rainbow Islands* has one of the most complex bonus systems ever. The seven coloured gems at the bottom of the screen have to be collected to reveal each island's hyper bonus item. And the position that the gem lands determines the colour, from the left of the screen (yellow) to the right (purple). Collecting them in no particular order only gives a one-up**



The helicopter requires a bit of strategy. The best way to take him out is to build up a collection of rainbows to drop on top of him. Inset: This is done by throwing them from below and landing on top of them

Level three



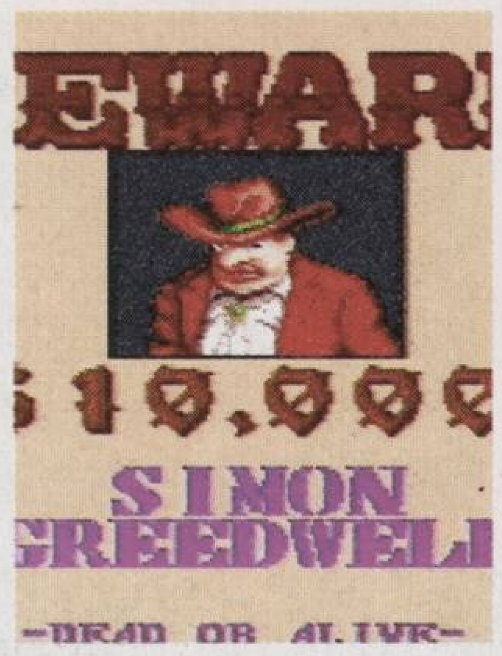
Things get noticeably more difficult from level three onwards, with the bats and cute pink dracs providing some serious frustration. It's not as tough as the horribly unfair Amiga version, though

Format: **Super NES**
Publisher: **Konami**
Price: **£45**

Sunset **Riders**

Since Konami branched out onto Mega Drive, Super NES owners have continued to enjoy the benefits of Konami's close links with the big 'N': consistently getting the best games first, with conversions to the Mega Drive usually following afterwards.

Sunset Riders is the first to change that, with the SNES version appearing a good six months to a year after the rather disappointing Mega Drive version. But, woooahhh! This is a far superior conversion with better graphics and all the stages that were left out of the Sega version. It's a spot-on conversion of the arcade, in fact. So, here's what it has to offer...





Each level has a different bad guy to take out, rather like that old coin-op *Gunsmoke*

Level one



The two-player simultaneous option is pretty good fun, and there's no slow-down either. But come on, those pink bullets are just silly (above)



Running on cattle is not recommended

Level two





At last, justice! The Sunset Riders reap revenge on those evil Travellers' Fare buffet car stewards



Level two starts off with a tricky section where you're riding behind a wagon dropping logs with a bloke firing out of the back at you. And as if that isn't enough, these horse riders try and take you out, too. Horrible

Sunset Riders* has the same kind of spilt-level gameplay (below) as games like *Rolling Thunder

Level three





Now, what's the point walking *around* the fire when you can hang from a rope one-handed, shooting all the bad guys at the same time?

Zombies ate my neighbors

Level one

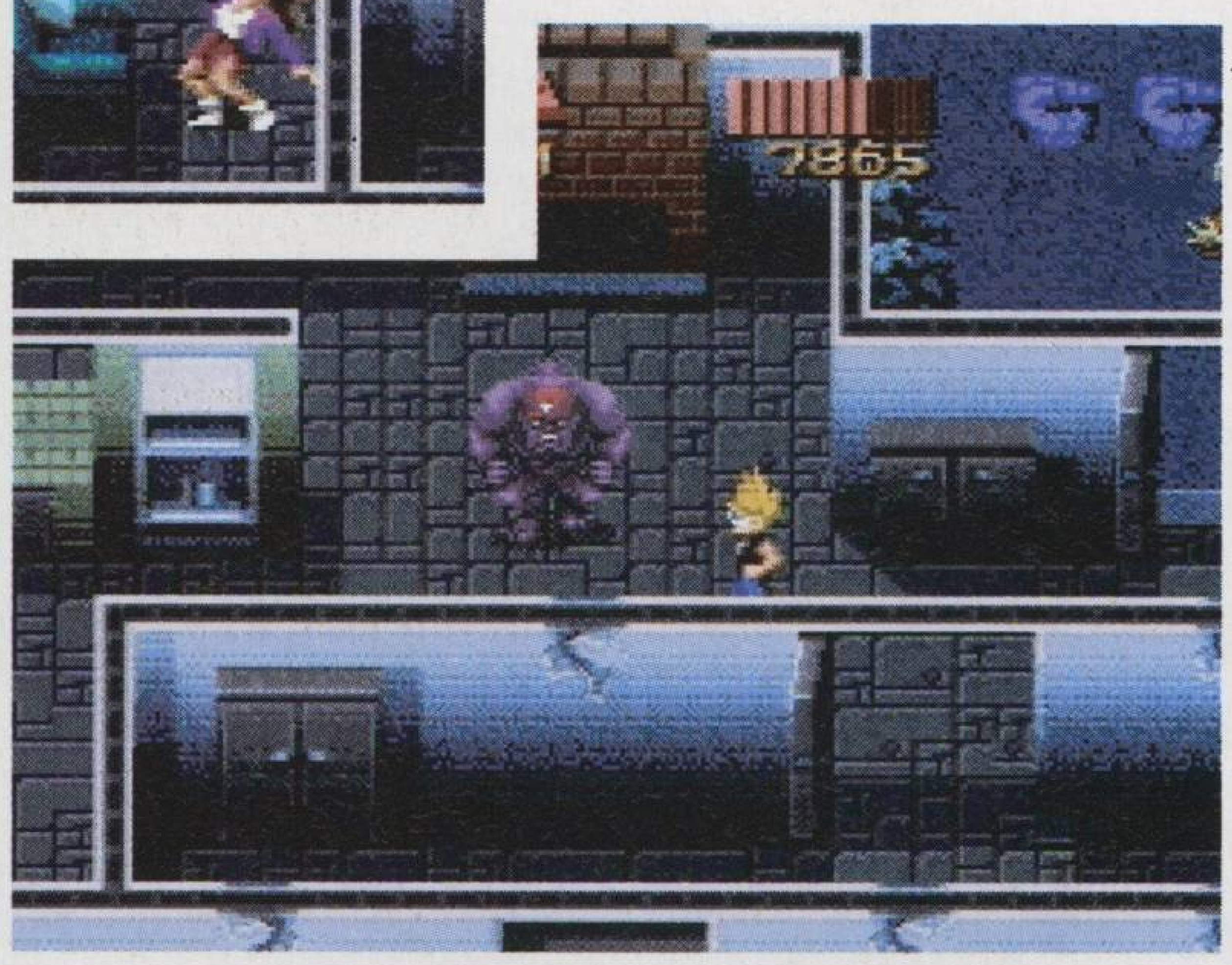




A zombie falls victim to a squirt from a water pistol (above), and a neighbour is about to perish (right)



This lovely lass (left), turns into this hideous creature (below)



Format: **Super NES**
Publisher: **Konami**
Price: **£45**

Zombies Ate My Neighbors is the latest release from Konami. Two players can simultaneously take part in an attempt to save all the neighbours through 45 levels of increasing difficulty.

You can either try to avoid confrontation with the living-dead, or be a hero and blast the hell out of them. Knifes and forks, beercans and bazookas are all available for use, and there are potions hidden in some of the houses that give your character superhuman strength.

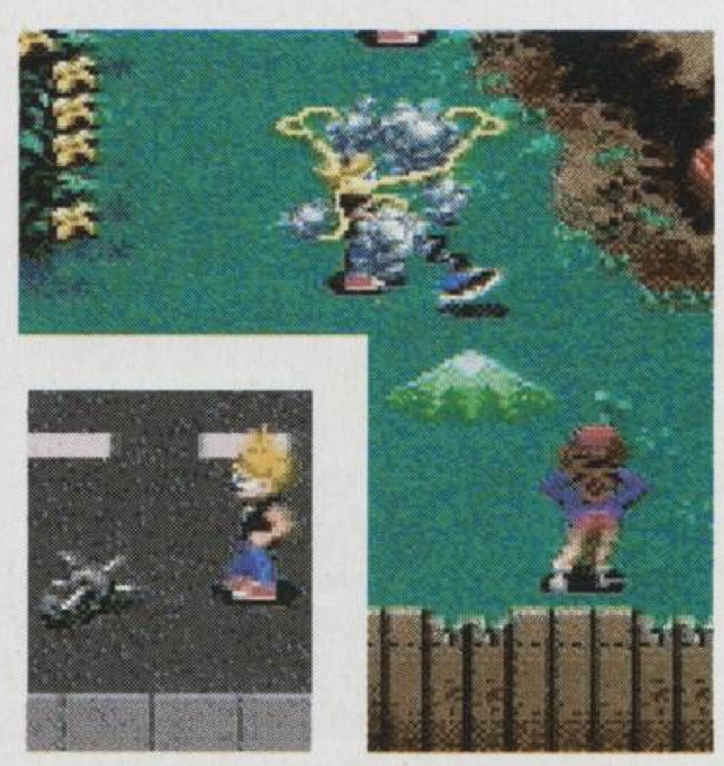
Levels are set in different places, from the local streets to the stadium. Use your radar to find the neighbours, but also pay attention to your surroundings: there are hidden paths that if found, reward you with weapons and energy.

Weapons

Weapons are plentiful and can be found lying around (insert), both characters have found the rather handy bazookas (right), those look-a-likes are in fact zombies



This rather nasty piece of equipment (insert) can be used to dispatch the zombies at close quarters (below)





Normal everyday objects can be used as weapons. This house has some useful plates, but better still, get knives and forks



A six-pack (insert), has a great exploding effect (above). Note the radar which shows the whereabouts of the neighbours – five remain



This level is set in a shopping mall. Objects such as tomatoes (insert), can be picked up and lobbed at the onward-marching, axe-wielding kids. The attention to detail in *Zombies* is marvellous. Look closely at this shot (above), the expression on the little girl's face is hilarious

Format: **Mega Drive**
Publisher: **Sega**
Developer: **Treasure**
Price: **£40**

Gunstar **Heroes**

Treasure's *Gunstar Heroes* looks and plays like Konami's *Super Probotector* on the SNES. No surprise – Treasure's programming team is largely made up of ex-Konami coders.

The athletic main character, the scrolling, the weapons, and the look of the bosses all give it that distinct *Super Probotector* feel. But this isn't a bad thing: *Super Probotector* was, and still is, a great shoot 'em up.

Each boss has been well animated – from the faceless mouth and eyes to the swirling dragon – a lot of time went into their design.

But it's lucky they're so well-animated – this game is packed with them. Just when you think you've finished a level, another boss appears, and then another, and another, and another...

Level one

Level one begins, and our hero has already equipped himself with flame thrower. Brilliant for short range attacks, but otherwise useless





Still in the same level, you get obstacles such as these claws that must be avoided at all

Level two



The beginning of stage two requires you to chase the shuttle up the screen. You have to be pretty fast as it moves very quickly. Watch out for those large, sharp and entirely functionless propellers that loom at the top of the screen



Two power-ups are available, the lightning fire and force fire. Combine them for best results

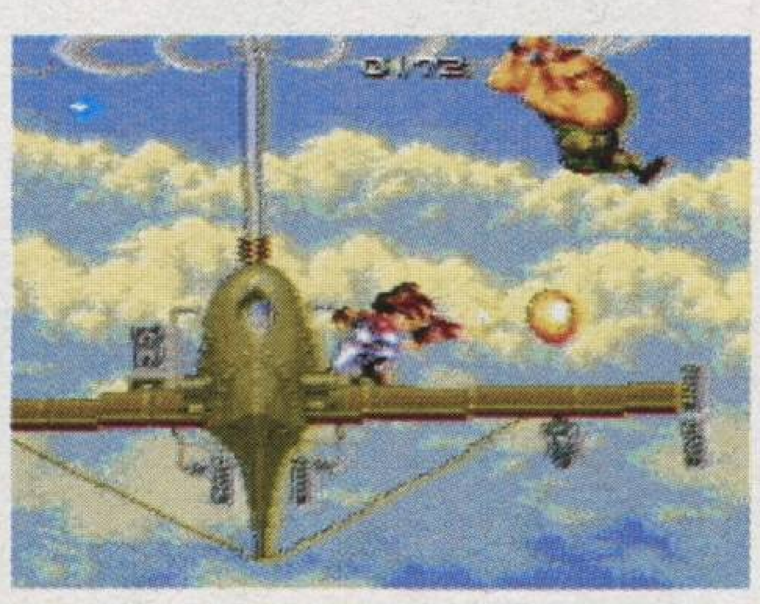


Decisions, decisions. After choosing weapons, you have the choice of which stage to tackle first. They all contain their fair share of baddies

Bosses



Gunstar Heroes contains many mid-level bosses. This fiery fellow is found in the dice palace



Someone should tell that guy that wing-walking is not the most sensible of pastimes



This boss may look great here, but wait till you see him. Even Walt Disney would be astonished...



The numbers in the middle of the screen display the boss's energy. His is a lot bigger than yours

Level three



Stage three is set underground. Using a mining cart you have to toggle between both the top and the bottom of the screen to ensure maximum success. This section moves along at a hectic pace

After the horizontal scrolling section you get the vertical one. Just as fast but you're left with very little room to manoeuvre. Again both sides of the screen must be used, especially when the bosses make an appearance



Level four



Throw the die to move around the board in the dice palace. Get to the end and face the last boss

The end of the fourth stage. All your athletic abilities must be used in order to make it through





The dice palace requires you to take on some of the toughest bosses in the entire game. This boss uses round sprites, and they individually spin around. Here all your fighting skill is needed as the boss attempts an aerial attack. Looks like Michelin man in full flight...



Level two's boss attempts to catch up your speeding cart. For best results, use the top of the screen



Travelling down the mining shaft, you get very little room to move. Here's boss two to welcome you



A new weapon has been created by combining two other weapons. So let the headless face have it



One of the ice palace bosses meets his match, and begins to blow up in pretty spectacular fashion

Format: **Neo Geo**
Publisher: **Sammy**
Price: **£225**

Viewpoint

Shoot 'em ups usually have little in the way of scenario: *Viewpoint* is no exception. Battle through six graphically brilliant stages using your craft, or Byupo. And that's all there is to it.

The Byupo has a special weapon, the power wave, which has four levels of intensity, the level you fire at is determined by the amount of time you spend hammering down your fire button.

At £225 *Viewpoint* is ballbreakingly expensive, costing even more than the newer 100 meg+ Neo Geo games. And apparently, SNK's own restricted supply is the reason. Make of that what you will.



Level one

Viewpoint **is one tough game, and the 'Soo-Rollos' will pose your first problem. Power up your power wave – a few blasts should put an end to their fun. Watch out, as this one nasty has a habit of spraying his fire**



Halfway through the first level. This is little more than a revoving barrier, but watch out for enemy fire and be quick or you'll get caught



The first big boss: the Snapping Turtle King, to be precise. 'Shoot it in the head', as the saying goes

The Mighty Mah-Too-Bah conceals the entrance to level three. Watch for his bubble bombs. Now is as good a time as any to use your smart bombs. The struggle continues even after you destroy his shell





Stage two has a very aquatic feel to it. The Marines Nest (above) has some of the best animation in the whole game. Avoid the serpents, they cannot be shot, then prepare for Gohn-Gee the fish (above left)

Level two

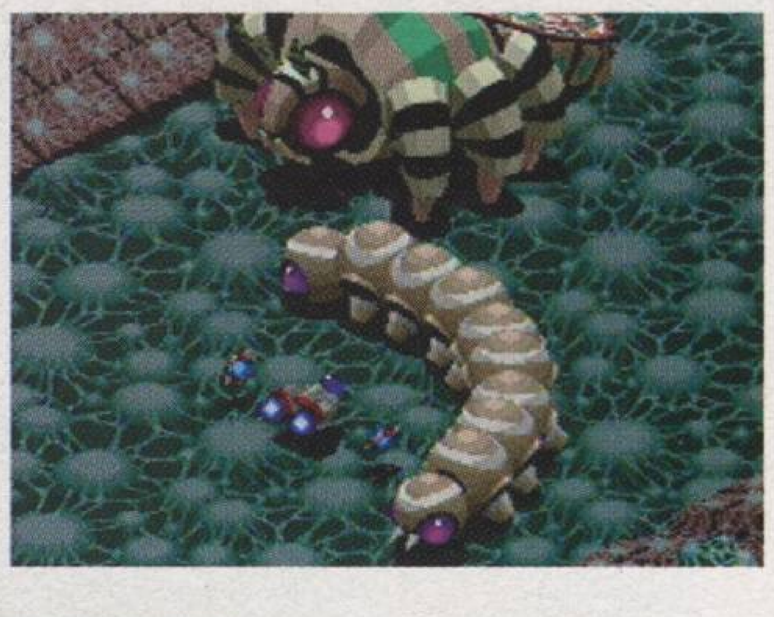




Level three

The fun is just starting – level three has some brilliant music complete with female backing singer. These blue worm-like creatures require a few hits, but then they don't die – no, not in this game – they just get mad. They curl up and attack in formation. Nasty!





These slugs (left) move across the scenery very slowly, touch them and die. This happy-looking fellow (above) is level three's boss. He's brought a friend with him. Destroy them both, now!

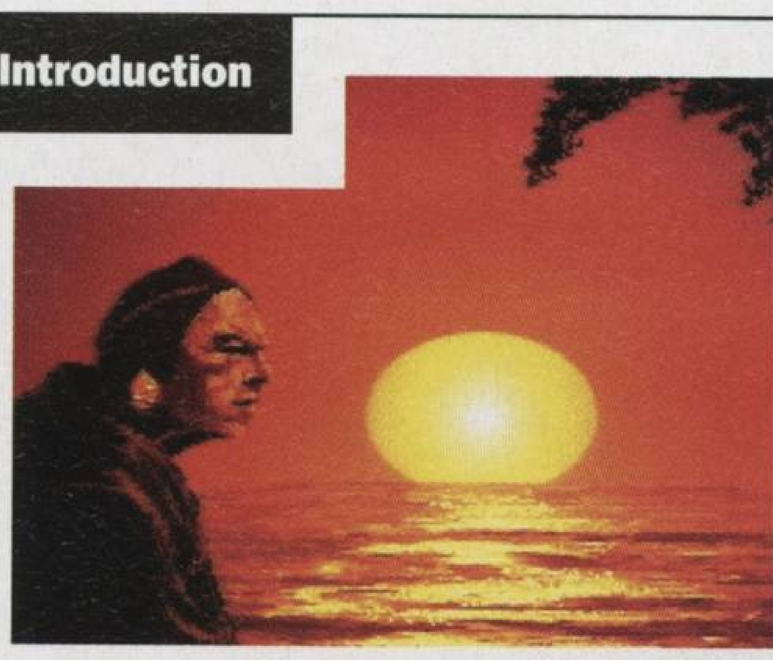
Inca

Format: **CD-i**
Publisher: **Coktel**
Price: **£40**

The Incan – Huayana Capac – has foreseen it all. He knows death is imminent, but he is at peace for he knows that the three great Inca powers: time, matter and energy are safe. They have been sent into space, out of the reach of the invading hordes of conquistadores.

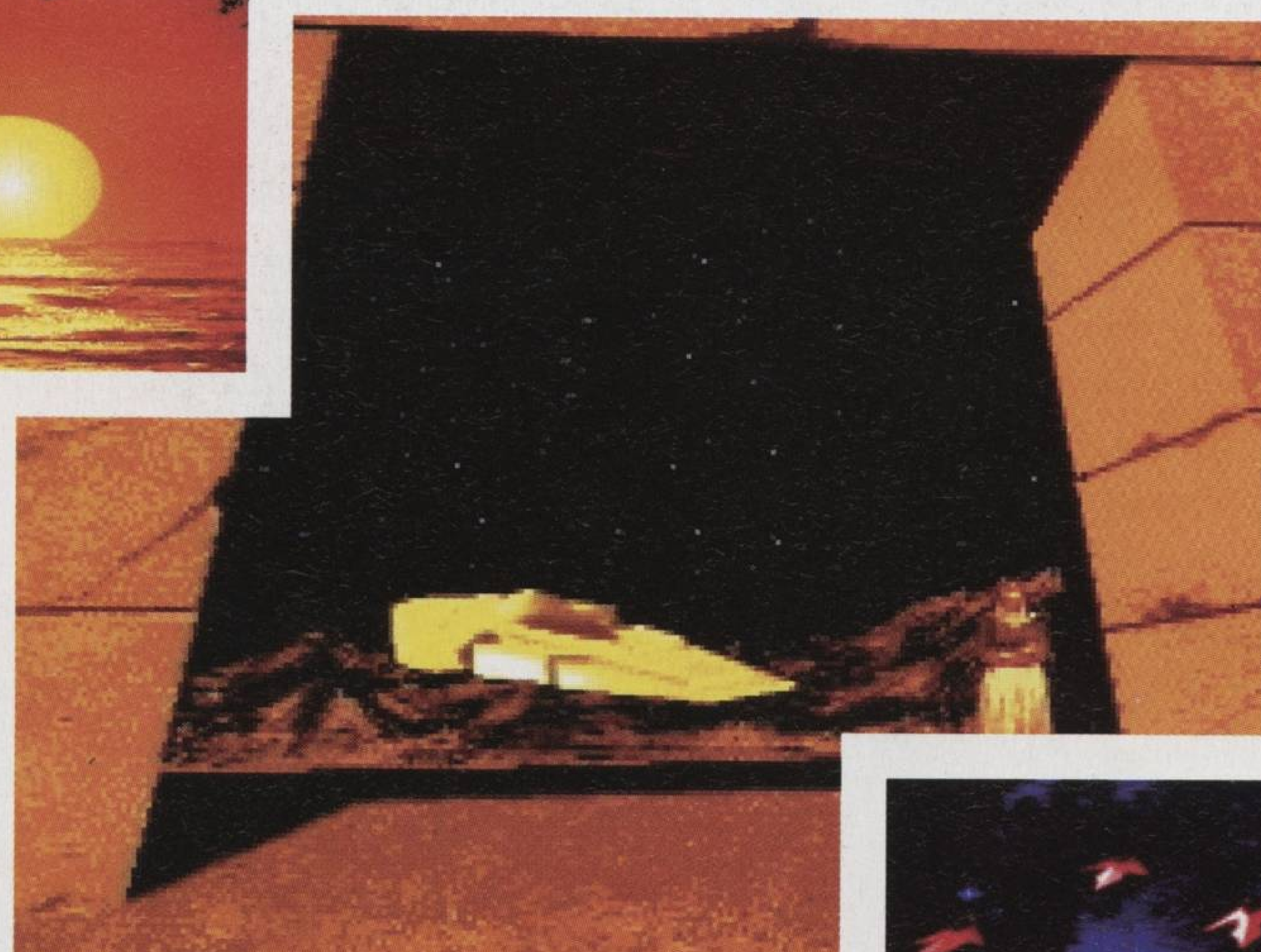
Information is scarce and after Huayana Capac outlines your mission, you're on your own. *Inca* uses the learn-as-you-go process that is beginning to play a large part in CD-i software. Your journey will take a while and thankfully there is a password feature to allow you to start where you left off.

Introduction



The intro (above) is accompanied by very atmospheric sound and speech. This old lady will soon shrivel up and, bizarrely, turn into bamboo. The bamboo then flies around the sky and invites you on a journey through space. Odd...

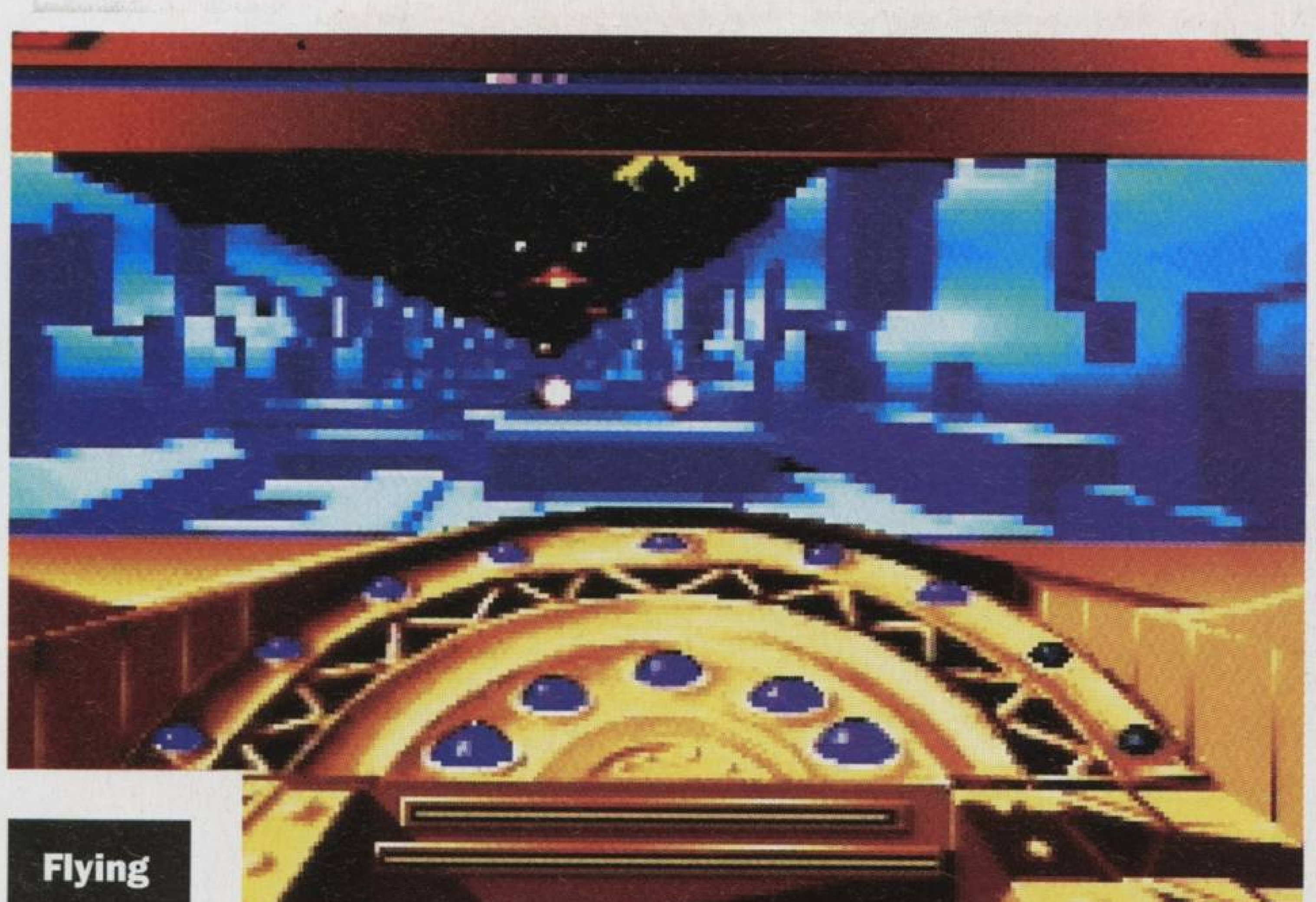
Your craft (below) stops on a planet and is greeted by a beautiful distressed damsel, who shares her story



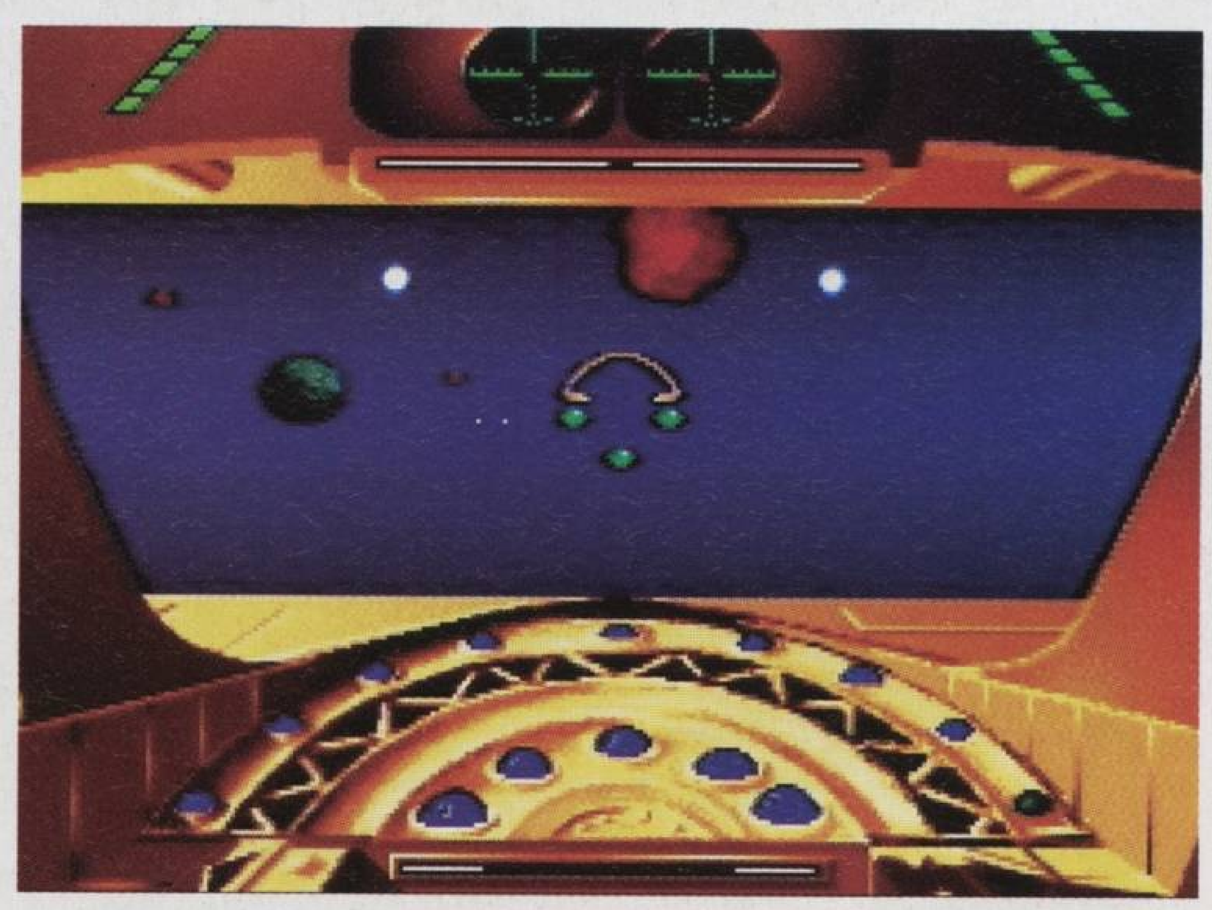


The enemy closes in to put an end to your heroics. Party poopers

Flying



The long blue line at the top is the distance you must travel on this level, and the white dots are the enemy. Your ship is represented by the brightest dot. You have to catch up and destroy the enemy before they reach the end. A sort of intergalactic cat and mouse



The first flying level is very simple – get to that red planet. Avoid the asteroids, that swerve dumbly towards your ship. The top of the screen has a radar that you use to navigate, and the white line at the bottom of the screen is your energy

Inside

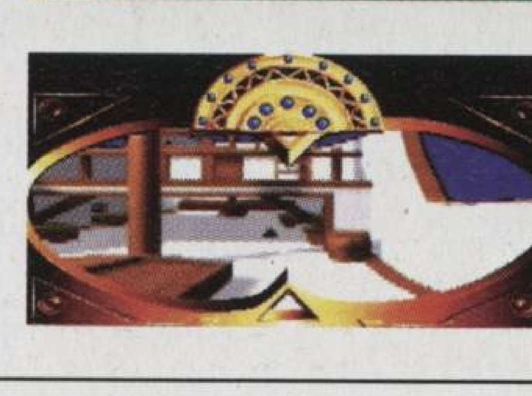


The first puzzle. Not as easy as it looks. We won't spoil it for you, but particular attention must be paid to the different coloured stones. The sun also plays a BIG part in the solution



Stage two is set in a labyrinth of corridors. The puzzles here are relatively straightforward, and provided you're not massacred when you turn the next corner, the first Inca power is yours...





If you're good, you'll get as far as this level (above left), set onboard a flying armada and full of traps. Get into the aztec labyrinth (above), and you are now face to face with someone who'll stop at nothing to thwart your plans. He plays peek-a-boo behind that pillar

Recommended reading

In which we preview our sister



Game featured: F1 Challenge

Magazine: **GamesMaster**
Format: **Multiformat**
Price: **£1.95**

'The latest edition of GamesMaster (September issue onsale 19th August: £1.95) has a decidedly automotive feel about it, boasting an, er, garage-full of car games. There are reviews of *F1*, *Rock and Roll Racing*, **Nigel Mansell's F1 Challenge** and *GP1* which, as a motorcycle race game pushes the point of the theme a bit. Also to be found adorning the cover of the mag is a lovingly crafted Top 100 book, filled in typically accurate GamesMaster style with about 90 great games for Mega Drive, Super NES and Amiga, with tips for each. And of course you'll find a tips section positively engorged with useful advice on games like *Alien 3*, *Jungle Strike* and *Syndicate*, a reviews section some forty-ish pages long and a voucher entitling you to a free £8.99 cassette from HMV stores when you buy your next Sega or Nintendo game there. So go and buy it, eh?'

Jim Douglas, Editor



Game featured: Bram Stocker's Dracula

Magazine: **Game Zone**
Format: **Nintendo**
Price: **£2.25**

'Issue 11 Vol 2, iSeptember '93

Bram's Stoker's Dracula: terrifyingly good or horribly bad? Psygnosis have staked out the SNES, Game Boy and NES, and Game Zone's got the first all-format reviews of this gothic romp. Keeping Fang-face company are *Street Fighter II Turbo*, *Mortal Kombat*, *Super Mario All-Stars*, *Asterix*, *Dr Franken 2*, *First Samurai* and *Mario Is Missing* among others. All our reviews, news, previews and some other things are all lovingly crafted in Game Zone's own unique – and wittily charming – style. So it's the mag you just have to have, if you happen to own a Nintendo.

It's a zone, it's got games in it and it's out August 11th. Miss it and you won't have a copy.'

Trenton Webb, Editor



Game featured: NHLPA Hockey '94

Magazine: **Mega**
Format: **Mega Drive/CD**
Price: **£2.25**

'The September issue of MEGA (onsale Thursday 19th August) not only features 16 (yes, 16) new Mega Drive game reviews, but also an astonishing slanging match between Sega boss Nick Alexander and Nintendo head honcho (bless you!) Mike Hayes – it makes riveting reading. There's the world exclusive review of EA Sports' **NHLPA Hockey '94** (this is their third version of the classic ice hockey sim: have they finally tweaked it to perfection?), the world exclusive review of *F-15 Strike Eagle 2* (a tried 'n' trusted flight sim from Mega Drive newcomers Microprose) and *Ecco The Dolphin* on Mega CD. Last, but by no means least, we interview one of Sega's top games developers to find out how Sega are pushing the Mega Drive further than ever before. He promises the 'Next Level' of Mega Drive games based on the revolutionary DSP chip will blow gamesplayers' minds!'

Neil West, Editor

magazines because we're good like that



Game featured: Thunderhawk

Magazine: **Sega Power**

Format: **Sega all formats**

Price: **£2.25**

'**The October** issue of Sega Power (out Thursday 2nd September) is gonna blow your mind with a tremendous and utterly exclusive review of that spectacular 3D helicopter/combat sim for the Mega CD: **Thunderhawk**. Then of course, there's *Populous 2* and the epic prehistoric adventure *Jurassic Park* to get all you Mega Drive owners salivating. There's also an in-depth look at the Mega CD 2 and Mega Drive 2. Cosmetic enhancement or real improvements? Find out here. Plus an on-the-spot report from Sega's first arcade theme park and vast gamebusting tips for *Flashback* and *Cool Spot* (among others). You can't afford to miss it!...'

Mark Ramshaw, Editor



Game featured: James Pond 3

Magazine: **Sega Zone**

Format: **Mega Drive/CD**

Price: **£2.25**

'**On Thursday** 26th August (early in the morning, when the shops open) your newsagent will be able to sell you a copy of the September issue of Sega Zone. There'll be a preview of **James Pond 3** so, er, that's probably quite exciting, isn't it? And of course there'll be *Bubsy The Bobcat*, and Puggsy the, er, new game from Psygnosis, and an interview with Peter Molyneux, author of the rather fabulous *Populous 2*. Oh, and have we got time to mention *Jurassic Park*? Or what about the World Not-Quite-Exclusive-But-Still-Pretty-Damn-Early review of MicroProse's *F-15 Strike Eagle 2*? Or a preview of *Mortal Kombat*? Buy it. Or don't. It's up to you, really...'

Tim Norris, Editor



Game featured: Street Fighter II Turbo

Magazine: **Super Play**

Format: **SNES**

Price: **£2.25**

'**Super Play's** sole purpose is to bring you the best of everything Super Nintendo. So, to that end, October's issue – on sale on Thursday 2nd September – comes with a free expertly-prepared guide to **Street Fighter II Turbo** provocatively sellotaped to the front. And inside Super Play itself you'll find a guide to fantasy role-playing games – not just obscure Japanese ones, but ones that're appearing soon here in the UK too. Plus detailed, definitive reviews of *Yoshi's Safari*, *Super Putty*, *Player Manager* and *Super Air Diver*, part one of a complete guide to *Super Mario All Stars*, a peek inside the Nintendo Helpline and lots more. It'll be shockingly good. Just £2.25...'

James Leach, Editor



Game featured: Mario All Stars

Magazine: **Total!**

Format: **Nintendo**

Price: **£2.25**

'**TOTAL! is** the essential magazine for serious Nintendo gamers (Issue 21 on sale Thursday 29th August). It's packed to bursting with the latest news from the US, Japan and even good old Blighty. This month's issue is very special indeed, with **Mario All Stars**, our highest ranked game ever. There'll be the usual selection of hot tips and cheats, big name previews and massive competitions. Also, we exclusively reveal the fate of the Super NES CD ROM system. As if that wasn't enough, we also review Streetfighter Turbo and Mortal Kombat! Which of these will emerge victorious? You'll have to buy TOTAL to find out...'

Frank O'Connor, Editor

viewpoint

What's your **opinion**? **Write** and **tell** us: **Edge** letters, 30 Monmouth Street, Bath, Avon, BA1 2BW

Letters

The kind of CD games that we have seen so far have, frankly, been far from mind-blowing.

At the moment, all I see are pretty pictures displayed on screen, clever introduction sequences, etc. If that's what you want, why not watch television?

Until the standard of gameplay is improved to the same extent that the graphics have been, CD will not make the sort of impact it is capable of.

In order to do so, the format needs a game with the same sort of playability as games like *Mario* and *Sonic* did on cartridges. At the moment everything on CD can be done on carts if you could afford to make them big enough.

Has anyone out there been genuinely impressed with anything they've seen on CD? What genre of games do you think best suit CD? And isn't *Tetris* on the Game Boy better than any of them?

Fergus McGovern
Probe Software

Fergus has a point. **Edge** is as much in favour of new technology as anyone. And while titles like *Silpheed* and *7th Guest* go some way to restoring the medium's flagging reputation, until some decent games are produced, with real leaps in the quality of gameplay, CD will remain the realm of extended intros and hi-definition sound.

What do you think? **Edge** wants to hear from anyone – readers, programmers, designers – with an opinion on the progress and prospects of CD-ROM. And if CD *isn't* the medium of the future, what the hell is?

For Mega Drive coverage I am well satisfied with Mega, therefore I will probably not buy **Edge** for 16-bit console coverage. Can you tell me, or give me an idea, how much coverage is planned for the newest 32-bit home videogame consoles such as CBM's Amiga CD32 and the 3DO machine? I know 3DO isn't even released Stateside yet, but it's the kind of sexy piece of kit that (wet) dreams are made of. Technoporn? Yes please!

Daren Chandisingh
Lancaster

Hopefully our feature on 3DO (page 48 if you sailed blindly past it) should keep you… *excited* until our real 3DO coverage starts later on in the year.

Whilst browsing through the latest Amiga Format, I saw an article about **Edge**. At first I thought it was this new Mega Drive thing which allows a keyboard to be plugged in (it's a modem – see page 15).

After reading it I thought that I would air my views about game prices. When I first got my Amiga a year ago I thought that the price of games was just right but recently I bought *Lemmings 2* which was priced at just under £30. This and *Walker*.

You and I both know that these games are worth the extra pounds, but how long is it before other companies see that they can get away with it and £29.99 becomes the standard price mark?

Simon Wilmot
Wiltshire

Videogame pricing is always a bone of contention. And it's ironic that as games move onto the cheaper medium of CD, costs must increase to cover the higher development costs. Perhaps direct-broadcast games will solve everyone's problems?



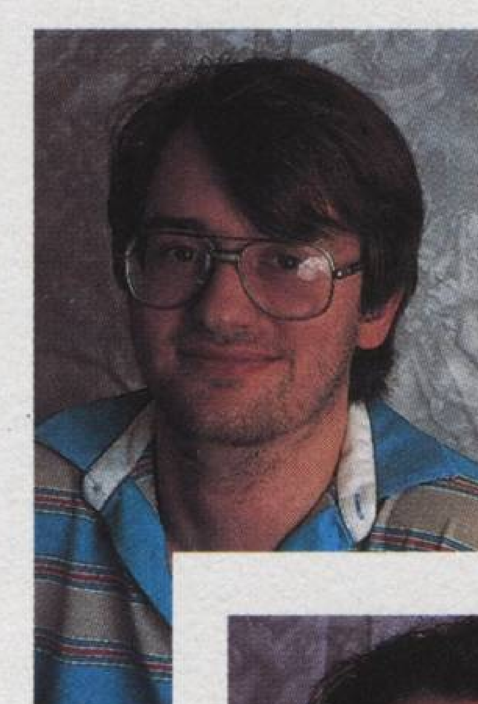
***Thunderhawk* on Mega CD. Does it raise any questions in your head?**

Core Design are

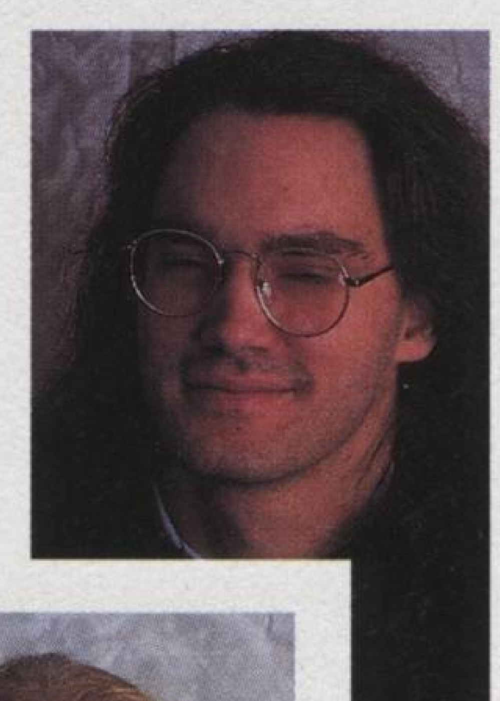
the chaps responsible for *Thunderhawk* on the Mega CD (prescreen, page 34).

And this is your chance to ask the three guys below some probing questions. Sender of the best question will visit Core Design and interview them using the questions that Edge receives.

There's a postcard in the bag with this issue: write your question on it and send it to: Edge, 30 Monmouth Street, Bath BA1 2BW.



Mark Avory Programmer



Jason Gee Graphic artist



Martin Iveson CD musician

Question and Answer

Most gamers, at one time or another, have come across a technical problem that they can't solve, or a pressing query with no-one to answer it. This is where Edge comes in…

If you have a problem, Edge can provide the solution; if you have a query, Edge will answer. If there's something you want to know about the making of a game or the internal working of a machine, write to Edge.

Simply jot your problem on some paper and send it to: Q&A, Edge, 30 Monmouth Street, Bath, Avon BA1 2BW. Alternatively, you can fax us on 0225 446019, or E-mail us via astorer@cix.compulink.co.uk.

Sorry, but Edge cannot answer queries over the phone and personal replies are not possible – even if you do enclosed an sae.

Talk to EDGE

Edge knows a fair bit about you already. You're well into the latest gaming technology, and you certainly know your way around the videogames market.

But Edge isn't going to leave it there. After all, you could be 18 or you could be 35 – and it does make a difference. You could feel there's too much news in Edge and not enough reviews, or vice versa. And we need your reaction.

So go on, tell Edge who you are and what you want from the magazine.

However, we don't expect you to tear up your copy, or even to have to find a photocopier. Just use the postcard included with the magazine. (You can still use this page or a photocopy.)

And if you put your name and address on, we'll be able to speak to you directly – to tell you about exclusive Edge events, or to give you advance information on Edge special features.

Talk to Edge... And send your completed form to Edge Questionnaire, 30 Monmouth Street, Bath BA1 2BW. There's no closing date – we're always interested to hear what you have to say.

One What machine(s) do you own and use regularly?

- a ☐ Mega Drive
- b ☐ Super Nintendo
- c ☐ PC
- d ☐ Amiga
- e ☐ Mega CD
- f ☐ Atari ST
- g ☐ PC Engine
- h ☐ Neo Geo
- i ☐ Other

Two How many of the above boxes did you tick?

Three Roughly how many hours per week do you spend playing games?

- a ☐ Up to 10 hours
- b ☐ 11-20 hours
- c ☐ 21-30 hours
- d ☐ 31-40 hours
- e ☐ 41 hours or above

Four Approximately how much money have you spent in the last month on software for your machine(s)?

- a ☐ Up to £30
- b ☐ £31-£50
- c ☐ £51-£70
- d ☐ £71-£80
- e ☐ £81 or above

Five Roughly how much money have you spent in the past year on hardware?

- a ☐ Up to £150
- b ☐ £151-£200
- c ☐ £201-£300
- d ☐ £301-£400
- e ☐ £401-£500
- f ☐ £501-£1,000
- g ☐ £1,001 or above

Six Which of the following Edge sections would you like to see less of?

- a ☐ Cutting Edge
- b ☐ Release dates/charts
- c ☐ Edge techviews (eg *Microcosm* feature, Surround/QSound feature)
- d ☐ Edge prescreens
- e ☐ Edge testscreens

Seven Describe Edge in three words

____

Eight Which of these do you own?

- a ☐ Compact disc player
- b ☐ Portable compact disc player
- c ☐ Satellite TV/cable system
- d ☐ Nicam stereo TV
- e ☐ Nicam stereo video
- f ☐ Hi-fi system
- g ☐ Tape-deck, amp & speaker separates
- h ☐ Camcorder
- i ☐ Electronic personal organiser

Nine Which other computer/console magazines do you buy or read regularly?

- a ☐ MEGA
- b ☐ Super Play
- c ☐ PC Format
- d ☐ Amiga Format
- e ☐ Amiga Power
- f ☐ Sega Power
- g ☐ Total!
- h ☐ Sega Mean Machines
- i ☐ NMS
- j ☐ Sega Zone
- k ☐ Nintendo Zone
- l ☐ Other(s)

Ten How old are you?

- a ☐ Under 16
- b ☐ 16-19
- c ☐ 20-25
- d ☐ 25-35
- e ☐ 36 or above

Eleven How much do you earn?

- a ☐ Up to £5,000
- b ☐ £5,000-£9,999
- c ☐ £10,000-£14,999
- d ☐ £15,000-£19,999
- e ☐ £20,000-£24,999
- f ☐ £25,000-£29,999
- g ☐ £30,000 or above

Twelve Do you intend to

- a ☐ BUY issue two of Edge?
- b ☐ RESERVE a copy? (See shopsave postcard for free slipcase offer)
- c ☐ SUBSCRIBE? (See page 113 and loose insert reply form)
- d ☐ or, frankly, NONE of the above

Thirteen If you ticked 12(d), please say why

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Other comments
(Remember, you can use the loose inserted postcard to fill out this questionnaire – or write on this page, or use a photocopy)

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Name

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Address

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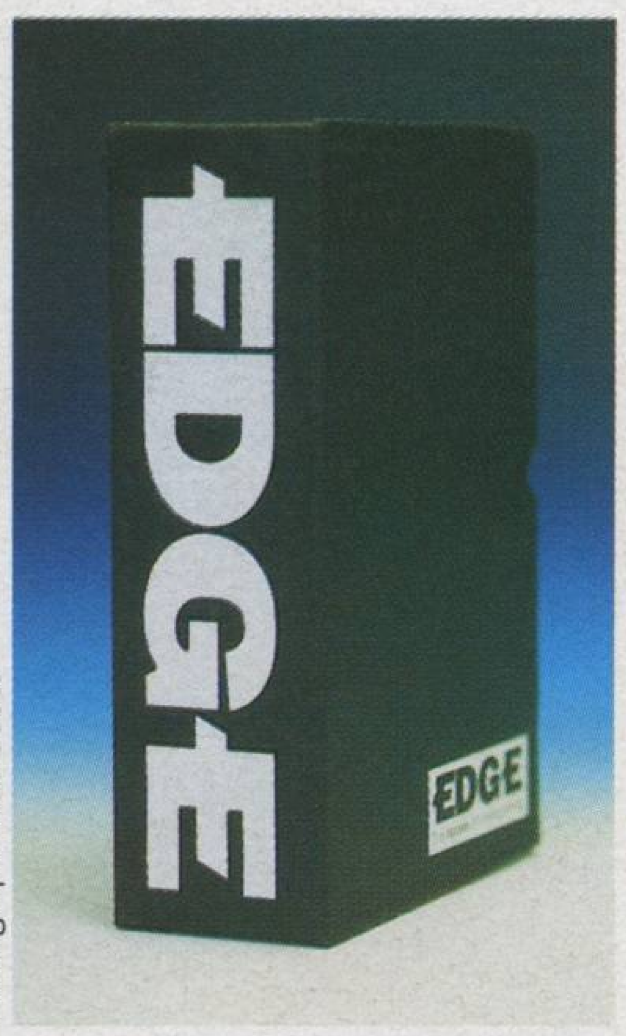
Phone number

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Send your completed questionnaire to **Edge Questionnaire, 30 Monmouth Street, Bath BA1 2BW**


JP
JURASSIC PARK
TM & © 1992 UNIVERSAL CITY STUDIOS, INC. & AMBLIN ENTERTAINMENT, INC.
WHEN THE STREET JUST AIN'T TOUGH ENOUGH...
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